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ABSTRACT

The Native Students Services (formerly the Indian Students University Program Services) provided support and tutorial services and outreach programs to Indian students. During the 1976-77 program year, the basic plan of operation developed during the preceding four years was continued. Students came from all parts of the province, from north of Slave Lake to the Blood Reserve on the southern border of the province. Six more students graduated this year, including the first of the Outreach students. The Outreach Program included three years of University of Calgary courses taught on a reserve with the fourth year courses taken on the University campus. This publication presents the reports of the academic coordinator and the tutor/counsellor on the students' progress and the improvements of the Native Students Services; an account of the interviews conducted to evaluate the third year program for students from the Stoney Reserve and from Calgary who participated in an inter-cultural program at Morley; and detailed reports of the projects of the Office of Educational Development. The various reports discussed program funding, advisory committee, staff, student enrollment and academic achievement, facilities, course load, tutor/counselling services, the Achievement Test for Indian Children, the Computer Assisted Learning Project, the Compendium of Native-Oriented Education and Employment Training Programs, and a preliminary study of the locus of control in Canadian Indian children. (NQ)

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THE UNIVERSITY OF CALGARY

Native Students Services

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Fourth Evaluation Report
1976 - 77

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NATIVE STUDENTS SERVICES

(FORMERLY THE INDIAN STUDENTS UNIVERSITY PROGRAM SERVICES)

FOURTH EVALUATION REPORT

1976-77

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DIRECTOR, OFFICE OF EDUCATIONAL DEVELOPMENT

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ACADEMIC CO-ORDINATOR

PUBLISHED BY THE OFFICE OF EDUCATIONAL DEVELOPMENT

WITH THE FINANCIAL ASSISTANCE OF THE DONNER CANADIAN FOUNDATION

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ABOUT THE COVER

Nora Yellowknee painted the cover design as a mural during course work for Art Education in the Grouard outreach program in the summer of 1975. The mural may be seen in the Alberta Vocational Centre at Grouard.

PREFACE

Each of the reports of the Native Students Services (formerly I.S.U.P.S.) has had a special feature in addition to the on-going accounts of students' progress and the numerous attempts at improvement of the Services. The third report, for instance, carried the long interview conducted by Andrew Bear Robe and in which Louise Loyie described her ten years in the Grouard Indian residential school.

This, the fourth report, has two special features:

(i) an account of the interviews conducted by Ms. Carole McInnis to evaluate the third year program for students from the Stoney Reserve and from Calgary who participated in an inter-cultural program at Morley.

(ii) detailed reports of the projects of the Office of Educational Development, directed by Dr. I.R. Brooks. This office has now completed its second year of operation.

The six major projects of the Office are listed on page 50 and are described in detail in the subsequent hundred pages.

The first two reports are now out of print but are available through the E.R.I.C. system as numbers ED 084 044 and ED 115 426. The third report can also be found in the E.R.I.C. system as document ED 129 545.

PART I

REPORT

of the

NATIVE STUDENTS SERVICES

PART I

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CHAPTER 1

REPORT OF THE ACADEMIC CO-ORDINATOR

Evelyn Moore-Eyman
Academic Co-ordinator

FUNDING

The year 1976-77 saw the continuance of the basic plan of operation developed during the preceding four years. There were, however, several changes of some importance, the most significant of which resulted from a more stable financial position. Through negotiations conducted by President Cochrane, an agreement was reached with the Department of Indian Affairs for guaranteed two-year funding with the University contributing something more than 20% of the funding in addition to the full facility (the study-centre, the Red Lodge drop-in centre, and staff offices).

The new funding arrangements made it possible to accede to the students' frequently expressed request for full-time tutor/counsellors. Two were appointed, and one, a recent Native graduate, undertook a co-ordinating role with special responsibility to assist the Native Club.

The transfer of the on-campus services to Calgary Hall with all rooms in the one convenient location has contributed to communication among the fifty students and four full and part-time staff. Only the Office of Educational Development (funded by the Donner Canadian Foundation) remained in a separate location in the Education Tower.

Students are registered in six different Faculties of the

University. The majority are to become teachers; the second largest group are enrolled in the Faculty of Social Welfare. As in the past, students come from all parts of the province, from north of Slave Lake to the Blood Reserve on the southern border of the province. Some, but by no means all, of the northern students have begun their studies in the University of Calgary summer courses conducted each year at the Alberta Vocational Centre at Grouard on Lesser Slave Lake.

ADVISORY COMMITTEE

With the departure to Ottawa of the chairman of the Advisory Committee, that body which had been unable to operate actively as a replacement for the former province-wide Native Steering Committee, continued in abeyance. The question of the best procedure for maintaining appropriate relationships between the Native Students Services (on campus) and the Native communities, remains unresolved at present. An answer may come, however, from the extensive consultation with Native people (conducted, in part, by Native people) which currently is in progress under the auspices of the Advisory Committee established by the Vice-President (Academic). This committee, chaired by Dr. R.S. Chapman, Dean of Continuing Education, is to report on the whole matter of the University's responsibility to Native people.

The students in the Native Club again conducted a very successful "Native Awareness" programme but in 1976-77 combined their efforts with those of the Department of History in an important conference entitled "One Century Later". To contribute to the conference

the students secured a grant of $5,000 from the treaty commemoration fund.

STUDENTS

As the tables which follow indicate, a further three students graduated in October, 1976, and three in June, 1977. A somewhat larger number is expected to graduate in October, 1977.

One fact of significance is that those graduating in June, 1977, include the first of the Outreach students. Rod Mark of the Stoney Reserve at Morley is the first of the students to complete the programme, the basic pattern of which includes three years of University of Calgary courses taught on a reserve with the final, fourth year courses being taken on the campus of the University. Two more Stoney students are expected to add to the number of graduates by December, 1977.

On the Hobbema Reserve, fifteen students have advanced to the point of undertaking student teaching in the third year program. A number have been placed for their practicum in schools with Cree children in the northern school divisions of Alberta. We look forward to at least ten of these students completing their four year degrees in 1978.

STAFF CHANGES

Returning to the services to students on-campus to complete this brief report, it is a pleasure to congratulate those students who have worked so hard to adapt to the ways of the University and to succeed within it. As a result of their

endeavours the drop-out rate among Native students is now very little different from that of students in general.

Several staff changes have been made for the coming year. Mrs. Josy Pakes, originally from the Blood Reserve, has been appointed tutor/counsellor and director of on-campus services for 1977-78. Ms. Carole McInnis is continuing for a second year as full time tutor/counsellor and Mr. Cecil King, formerly of the Saskatchewan Indian Cultural College, will be assisting on a part-time basis.

It is expected that Mrs. Sollner of the Department of Indian Affairs will continue to assist students two days per week, and Mrs. Brandley will continue as secretary on a part-time basis.

FACILITIES

The greatly improved facilities will continue to be available in Calgary Hall. These include the Red Lodge drop-in centre and a study room. Offices are needed, however, to house the additional part-time staff and the Office of Educational Development, which is still separately housed in the Faculty of Education.

It is expected that the Native Club will continue to provide a vehicle for student organization and policy input and that the weekly student/staff "rap sessions" and informal contacts in the Red Lodge will contribute to the communication network. It is the view of the staff, however, that efforts should be made on a more continuous basis next year to involve new first year students more fully in both social and academic activities.

HUMAN SERVICES WORKER

One further development is worth mentioning at this time. In early 1977 the office of the Academic Co-ordinator initiated discussions both with the Native community and several university Faculties in response to a good deal of Native input on the desirability of the training of a new type of professional - a human services worker qualified to provide a number of services in isolated areas and on reserves.

The Vice-President responded by establishing a committee of which the members are:

Dr. R.S. Chapman, Chairman
Mr. G.D. Calliou, student, Faculty of Law
Mr. C. King, student, Ed. Foundations
Prof. E. Moore-Eyman, Native Students Services
Mrs. J. Pakes, Native Students Services
Dr. D.B. Smith, History
Dr. R.M. Stamp, Education
Dr. F.H. Tyler, Social Welfare

Extensive consultation is in progress with:

(i) members of the Native communities throughout the province,

(ii) all universities in the province,

(iii) departments of government, both federal and provincial,

(iv) Native students,

(v) various units within the university

The Committee expects in early fall to submit a report on the full range of university responsibilities with regard to Native people.

CHAPTER 2

ACADEMIC REPORT

Dr. I. R. Brooks
Director, Office of Educational Development

STUDENT POPULATION

As we have noted elsewhere (see Brooks and Moore-Eyman, 1976, 1) when a support service rather than a program is to be evaluated, there are problems in determining the student population which can be used as a basis for evaluation. Consequently, in order to define the population that could be used for the purposes of this report, it was decided to include all Native students at the University of Calgary who:

(a) were first admitted to the University through the Indian Students University Program, and/or

(b) have, to any degree, made use of the support services currently offered, and/or

(c) actively affiliate themselves or identify themselves with the Native Students Services.

Information available to us would lead us to believe that better than 85% of the Treaty Indian students on campus fall into one or more of the above-mentioned categories. Although this is more difficult to determine for non-Treaty Indian students, information provided through personal contacts leads us to conclude that, again, the proportion using the Native Students Services is quite high.

STUDENT PROFILE

A profile of the student enrollments for the academic year 1976-77 is presented in Table I. It can be seen that 55 students (41 Status and 14 non-Status) satisfying the aforementioned criteria for inclusion, were enrolled in the University of Calgary on campus during the 1976-77 academic year. Between 15 and 18% of the total number of students had first enrolled at the University in each of the academic years from 1972 to 1976; whereas, 35% were beginning students in 1976-77. It should be noted that of 19 first-year students, five first enrolled in the winter, that is to say the second, term.

Table 1 also provides a measure of the retention rates for these students and, overall, the record is quite satisfactory. Of the 55 students enrolled during the 1976-77 year, 46, or 84%, completed the year, as compared with 81% for 1975-76. Furthermore, two of the students who withdrew from the on-campus courses subsequently registered for one winter term in the off-campus program at Hobbema. It is encouraging to see that whereas in 1975-76, 36% of the first-year students failed to complete their courses, only 11% of the first-year students in 1976-77 dropped out. For two or three years now it has become apparent that relatively few of the senior students withdraw from the University and, now that nearly 90% of the first year students have completed their courses, one might be optimistic that the high drop out rates noted in previous years are things of the past.

In conclusion then, 46 students (33 Status and 13 non-Status)

TABLE I.

Full-time Students Enrolled at the University of Calgary

and Affiliated with the Native Students Services;

1976-77, Shown by Year of Initial Enrollment

On Campus Initial Registration	Registered 1976-77 Summer 1976 & Spring 1977			Withdrew Before Spring 77			Completed Year 1976-77		
	Status	Non-Status	Total	Status	Non-Status	Total	Status	Non-Status	Total
1972-73	8	2	10	3[1]		3	5	2	7[2]
1973-74	7	1	8	2		2	5	1	6
1974-75	6	3	9				6	3	9
1975-76	6	4	10	2[3]	1	3	4	3	7
1976-77	14	4	19[4]	1		1	13	4	17
Total	41	14	55	8	1	9	33	13	46

[1] Includes 1 student who withdrew Fall on campus and registered Winter Hobbema

[2] Includes 2 students who graduated June, 1977.

[3] Includes 1 student who withdrew Fall from on campus and registered for Winter Term at Hobbema and also includes one student completed Fall and transferred out in Winter Term.

[4] Five students enrolled for the Winter Term only.

completed the academic year 1976-77. This compares with 35 students (28 Status and 7 non-Status) who completed the academic year 1975-76. More importantly, it is always a pleasure to report that three of the students graduated from the University in the Spring 1977 Convocation. Two of these students received Bachelor of Education degrees and one a Bachelor of Social Welfare. This means that eight Native students, having had some contact with the Native Students Services, have graduated from the University of Calgary since the Services (formerly the Indian Students University Program) began in 1972.

The frequency distribution of grade point averages (G.P.A.) received by the 46 students completing their academic year is given in Table II. In order that no one person's grade can be readily identified, the results for both Status and non-Status students have been combined.

No student received a G.P.A. equal to an A or an A-; however, seven, or 15%, of the students completed the year with a B average. This compares with only two or 6% for 1975-76. The most frequently received grade point average was in the range of C or C+, the minimum required for graduation by most faculties. This is quite consistent with past performance and is to be expected as the University considers C to be the average or most frequently awarded grade. Seven students received a grade point average of C- and eleven either a D+ or a D. Hence, 39% of the students completed their year with a G.P.A. in the low-pass range. Rather more disturbing is the fact that nine, or 20%, of the students received an F average as compared with only 9% for

TABLE II.

Frequency Distribution of Grade Point Averages for the Academic Year 1976-77; Shown for all Students Completing the Year on Campus; Shown by Date of Initial Enrollment

On Campus Initial Enrollment	4-3.65 A and A-	3.64-2.65 B+,B,B-	2.64-2 C+ and C[1]	1.99-1.65 C-	1.64-1.0 D+ and D	Below .99 F	Total
1972-73			6		2	1[2]	9
1973-74		2	1		2	2[3]	7
1974-75		1		2	2	2	7
1975-76		2	5[4]		1		8
1976-77		1	1	5	4	4	15
Total		6	13	7	11	9	46

[1] Minimum for graduation in most faculties.

[2] One student withdrew after completing only one term.

[3] One student withdrew after completing only one term.

[4] One student withdrew after completing only one term.

1975-76.

COURSE LOAD

Finally, it is useful to examine the course load carried by the 46 students who completed the 76-77 academic year on compus. Table III shows the frequency distribution of course loads, course load being defined as the number of half-courses (or half course equivalents) taken during fall and winter term.

Most programs require 40 half courses for graduation and, therefore, ten half-courses per year is usually considered to be a full load. From Table III, it can be seen that two students carried a full load and that one carried one course more than a full load. It can also be seen that an additional 14 students were within two half-courses of a full load. Although 30, or 65% of the students, were carrying loads more than two half-courses per year short of a full load, it must be remembered that students are encouraged to take slightly reduced course loads during the fall and winter terms, picking up the extra courses during spring and summer. It is for that reason that eleven students, or 24% of the total, took four courses less than would be required in a full load.

Tables IV, V and VI show similar information for the Outreach Program with the four bands of Crees at Hobbema, Alberta. It can be seen from Table IV that 26 students, including four first year students, were registered during the 76-77 academic year. More importantly, no students withdrew during this period of time. Further, 14, or over half of the students, completed nine half-courses (see Table

TABLE III.

Frequency Distribution of Number of Half-courses Taken On Campus during 1976-77; Students Classified by Date of First Enrollment

Date of Initial Enrollment	Number of Half-Course Equivalents Completed (includes failures)											Total Number of Students	Average Number of Courses Per Student
	1	2	3	4	5	6	7	8	9	10	11		
1972-73	1[1]		1[2]			3	3		1			9	4.9
1973-74		2[3]				2	1		2			7	5.9
1974-75				1			2	1	2	1		7	7.7
1975-76					1[4]	1		2	3	1		8	8.0
1976-77	1[5]	1		2	2	5		2	1		1	15	5.3
Total	2	3	1	3	4	11	6	5	9	2	1	46	6.3

[1] Includes 1 student who took 1 term only.

[2] Includes 1 student who took 1 term only.

[3] Includes 2 students who took 1 term only.

[4] Includes 1 student who took 1 term only.

[5] Includes 1 student who took 1 term only.

TABLE IV.

Full-time Students Enrolled at Hobbema for 1976-77;

Shown by Date of Initial Enrollment *

Hobbema Initial Registration	Registered 1976-77	Withdrew	Completed Year
1972-73	1[1]		1
1973-74	1		1
1974-75	10		10
1975-76	10[2]		10
1976-77	4		4
Total	26*		26*

[1] Includes one student who transferred from the on campus courses.

[2] Includes one student who transferred from the on campus courses.

* In September 1977 the enrolment at Hobbema reached 45.

V). This, it will be recalled, is only one half-course short of a full load. In addition, one student did complete a full load of ten half-courses and a further three were within two half-courses of a full load.

Table VI shows that, as was the case with the on-campus students, the most frequently received grade point average was a C or a C+. One student received an A and four, or 15%, received a G.P.A. equivalent to a B-, B or B+. Seven students completed the year with averages in the low-pass range and a further five, or 19%, received F's.

In conclusion, it can be said that the enrollment both on-campus and at Hobbema increased, and that most students carried a reasonable course load. Further, although some students received failing year-end averages, most appeared to be progressing quite satisfactorily. The two most promising trends are that, first, every year more Native students graduate from the University and, second, that every year the drop out rate is decreasing.

TUTOR/ COUNSELLING SERVICES

In order to assist students in completing their studies successfully, the Native Students Services provides two full-time tutor/counsellors. These are available on a drop-in basis to any and all students who may wish to avail themselves of additional help. In actual fact, much of the tutors' activity involves counselling on personal, social or business matters in addition to academic tutoring.

TABLE V.

Frequency Distribution by Number of Half-courses Taken at Hobbema during 1976-77; Shown by Student's Date of Initial Enrollment

Hobbema Date of Initial Enrollment	Number of Half Courses										Total Number of Students	Average Number of Courses Per Student
	1	2	3	4	5	6	7	8	9	10		
1972-73				1[1]							1	4
1973-74									1		1	9
1974-75				2				1	7		10	7.9
1975-76	1			2[2]		1	1	1	3	1	10	6.8
1976-77								1	3		4	8.75
Total	1			5		1	1	3	14	1	26	

[1] One student attended Winter Term only.

[2] One student attended Winter Term only.

TABLE VI.

Frequency Distribution of Grade Point Averages
for 1976-77 for Students at Hobbema;
Shown by Date of First Enrollment

Hobbema Initial Enrollment	4-3.65 A and A-	3.64-2.65 B+,B, B-	2.64-2 C+ and C	1.99-1.65 C-	1.64-1.0 D+ and D	Below .99 F	Total
1972-73			1				1
1973-74				1			1
1974-75	1	2	3	1	3		10
1975-76		2	5		1	2	10
1976-77					1	3	4
Total	1	4	9	2	5	5	26

According to records kept by the tutor/counsellors, a total of 322 hours and eleven minutes were spent in tutoring/counselling activities during the eight months from September 1976 to April 1977. Forty-nine of the fifty-six students affiliated with the Native Students Services made a total of 624 visits to the tutors. If anything, these figures are an under-estimate of the amount of tutoring/counselling that took place as, according to the tutors there are commonly several students involved in each tutoring session, and also much tutoring and counselling takes place outside of office hours. Of the 322 hours and 11 minutes spent on tutoring/counselling, 203 hours 18 minutes, or 63% of the time, was spent in providing assistance with course work. An additional 73 hours, or 23% of the time, was spent in personal and social counselling, with the remaining 46 hours, or 14%, being devoted to counselling in the area of personal finance or business.

It can be seen from Table VII that the months having the highest number of visits are December and March. This is not surprising as these are the months in which term papers are due and term tests are administered. It is also interesting to note that in the months of September and January 26% of the total visits to the tutors took place. This suggests that students do seek assistance in program planning and course selection.

Two hundred and twenty-seven of the 345 visits devoted to academic tutoring were related to specific courses. Table VIII shows the number of visits, and time spent in academic tutoring, according

TABLE VII.

Number of Visits to Tutor/counsellors in 1976-77;
Shown by Type of Counselling and by Month

	Sept.	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
Academic	25	59	94	48	31	77	7	4	345
Business	35	15	18	19	21	14	5	1	128
Personal/ Social	25	24	24	15	27	23	6	7	151
Total	85	98	136	82	79	114	18	12	624

TABLE VIII.

Number of Visits and Time Spent in Tutoring;

Shown by Subject Area

Subject Area	Visits	Time
Anthropology	27	19hrs 5 min.
Art	2	1hr 15 min.
Classics	1	5 min.
Drama	4	2hrs 40 min.
Economics	2	1 hour
Educational Foundation Foundations	5	2 hrs. 30 min.
Educational Psychology	28	3 hrs 35 min.
English	33	29 hrs 15 min.
Geography	19	11 hrs. 48 min.
History	25	19 hrs. 25 min.
Law	3	1 hr. 15 min.
Mathematics	7	2 hrs. 15 min.
Music	1	20 min.
Philosophy	3	1 hr. 45 min.
Political Science	19	12 hrs. 35 min.
Psychology	20	9 hrs. 15 min.
Religion	1	20 min.
Social Welfare	27	3 hrs. 50 min.
Total	227	120 hrs. 13 min.

to the subject areas into which the courses fell. It is interesting to see that 33, or 15% of the visits, involving almost 30 hours of tutoring, were related to courses in English. History and anthropology were the areas in which assistance was next most frequently sought. Both took approximately 26 visits, or 11% of the total, for approximately 18 hours.

A more detailed report about the nature of the tutoring/counselling involvement follows. The results reported so far, however, show that nearly all of the students sought academic assistance and/or personal counselling, and that, therefore, such services are an essential ingredient in any support service. *

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* To the hours of consultation provided by those formally appointed as tutor/counsellors should be added the five to fifteen hours per week that the Academic Co-ordinator spends with individual students or with groups of students. These hours have not been reported above. See also page 29 of the tutor's report for comment on under-reporting of hours by tutor.counsellors.

CHAPTER 3

REPORT OF THE TUTOR

C.S. McInnis
Tutor, N.S.S.

ROLE OF TUTOR/ COUNSELLOR

In September 1976 two full time tutor/counsellors were employed by Native Students Services. These positions were filled by individuals who were new to the staff but not necessarily unfamiliar with either the program on campus or the students. The staff met in late August to plan Orientation Week and to exchange ideas for the coming term. In late September and early October Elsie Wingeno and I participated in seminar sessions with Dr. Corneleit Yule, the previous tutor for the Native students. Discussions ranged from tutoring techniques and behaviour modification principles to participation in social activities with the students. It was agreed that we were not qualified to act as psychological counsellors and therefore we would refer students to the appropriate office or institute when this help was warranted. The term counsellor in the title refers to the consulting of students with the counsellor about programs, course selection and the economic or other personal problems experienced by the students. The discussion of the latter problems was of crucial importance to the students, many of whom were new to the university environment. However the title of counsellor caused some confusion in the early part of the term since students associated this with

psychological counselling and therefore expected this type of help to be available.

NATURE OF TUTORING SESSIONS

The responsibilities of tutoring and counselling were light in the first few months due to the need to develop rapport between student and tutor/counsellor. By mid term this was successfully established and at times there were not enough hours in the day to work with all those who needed assistance with their academic tasks. At this time, a schedule was posted on the door of the tutors' offices so that students could sign up for a time and know that they would receive assistance then. This system was only useful during the very busy periods, otherwise students preferred to be free to stop in when they needed assistance or to schedule times with the tutor personally.

Most of the academic tutoring needed was in the area of paper writing. Students did not know how to organize their ideas or how to pursue a topic they wanted to write about. With the former students the following procedure was used. The students were asked to list the points they would cover in their papers. Questions arose from this discussion. These ideas were written down and from them a logical outline was written by the student and tutor together. Most students would then go off on their own to write their papers. Usually they were returned to the tutor, who would then read for structural and grammatical errors. The procedure here was to mark the errors and then discuss them with the student so the appropriate

changes could be made. In some instances only the latter part of this procedure was necessary. Library trips were made with those students who had not yet researched their topic. The tutor and student together researched the topic, selected books, and decided upon the relevant reading material within the book. The student was then to do the reading and meet with the tutor later to discuss an outline.

Another form of tutoring carried out was a mutual reading and discussion of material to be covered in exams. Here the tutor assigned the student two chapters, for example, to be discussed the following day. Generally the student knew what chapters he had to read so it was an easy task to set up regular times on a daily or weekly basis. This method met with good success with the students who used it, a mutual exchange of knowledge took place and both tutor and student learned and benefited.

Two other types of tutoring took place within the Native Students Services Departments this year. One was group discussions and was infrequent and spontaneous. Upon occasion students had papers to write on the same topic. When students congregated in the tutors' offices, talk inevitably turned to current assignments. The tutor in this situation was able to act as a catalyst to a discussion by asking questions and stimulating the exchange of ideas.

EVENTS AND DUTIES EXTRA TO THE ROLE OF TUTOR/ COUNSELLOR

Occasional tutoring took place after office hours. Students phoned or came to the tutor's home to work on assignments. These were usually essays. It was clear to the student that this was not to

be a regular occurence but rather to be used when students were in dire straights. No one abused the privilege and this writer did not feel imposed upon. The work was carried out in the spirit of "being in this together." The students knew the tutor was concerned that they carry out their assignments and was willing to extend herself for unusual circumstances. No academic or social dependencies arose from this.

The tutors took part in numerous events which fell outside of their role as tutor/counsellor. Extracurricular socializing took place often, sometimes with the entire group of students and at other times with individuals and their families. Most of these events and duties extra to the role of tutor/counsellor were either spontaneous or loosely organized and consisted of activities such as picnicking, skating and occasional parties.

Both tutors participated in the Indian Awareness Day held by the Native Club, through organizing specific aspects such as the crafts and the selling of raffle tickets. This year Awareness Day was held in conjunction with an Educational Counsellors Workshop and The Western Canadian Studies Conference.

TUTOR/ COUNSELLOR WORKSHOP

A meeting of tutors and/or counsellors working with Indian people in Alberta was hosted by Native Students Services in June of this year. This meeting arose out of discussions which originated at N.A.B.E.C. in May. It was felt that there was a need for more information on programs and services for Native students

in post secondary institutes in Alberta and secondly, that we could benefit from the experience each had in working with these students. As co-ordinator of this one day workshop, it was my responsibility to organize and pace the event. It was felt by those attending that the day was informative and useful particularly in terms of gaining an awareness of the Native-oriented programs in the province. Most participants expressed a wish for future meetings to discuss specific tutoring and counselling techniques. This will be hosted by the University of Lethbridge in September.

CONCLUSION

My familiarity with the Stoney students at Morley led to my participation in an evaluation of the Bi-Cultural Education Program held on that reserve.[1] I had worked with these and other Stoney people previous to my current contact with the students on campus. The students who took part in the program were accustomed to me and readily helped me with the interviews. All were co-operative and helpful.

In all, my year as tutor/counsellor has been rewarding. I have been overjoyed at the progress made by some and despondent over the dissolution of others. The students are responsive to me and I believe I have developed a rapport with most that is encouraging to their seeking assistance from me, both academically and with other problems they might have. It is difficult to measure the

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[1] See pages 41 to 47.

effectiveness of the academic tutoring that takes place. Did a student improve because he was tutored or because he had become more familiar with the university setting and expectations? These are only a few of the variables that affect any attempt to evaluate the tutoring services. The logs that are kept by tutors are not an accurate record of the actual time spent with each student. Many times when things were particularly busy logs were not kept at all. Tutoring in my home or otherwise away from this office are not recorded. The greatest discrepancy is with the record of personal/social category. This is almost impossible to trace. Conversations with students in the Red Lodge, for example, were not recorded, so it is not inaccurate to estimate that the tutor logs represent less than half the actual time spent with students.

RECOMMENDATIONS

It is imperative that students come to the tutors with their papers early enough for the student to make any changes that are necessary. Reading a paper half an hour before it is due to be handed in is not useful. This will be impressed upon the new students entering in September 1977. A previously unsuccessful attempt at group essay writing seminars will be repeated but with some variations. The focus will be upon the first year students.

Secondly, it is essential that there be strong cohesion between staff members. Past disruptions have created distractions among the students which resulted in late assignments and poor performance on exams. Dissent amongst staff resulted in dissension and the

formation of factions amongst the students. This is counter productive for the students in terms of their university studies. It may well provide a useful learning situation when viewed in another context, however the concern of the tutor/counsellors is to encourage students to complete their degrees.

The two points mentioned in the preceding paragraphs were the major problem areas with the Services. It is felt that both can be dealt with in the following year since there will be some continuity of staff, thereby eliminating the time spent in developing rapport with the students. In particular the staff will concentrate on reaching the new students to impress upon them the time and energy that must be put into university courses in order to be a successful student. It is my optimistic view that the 1977-78 term will be a successful and productive year for the Native students at The University of Calgary.

PART II

REPORT

of the

MORLEY OUTREACH PROJECT

PART II

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Morley Reserve University Outreach Students outside the Primary School.

Eleven students undertook full-time study in the professional (third) year of Education in an intercultural situation on the Morley Reserve in 1975-76. From left to right: Sharon Fellows, Cheryl Nelner, Rod Mark, Kathy McLean, Shirley Crawler, Evelyn Moore-Eyman, Josy Pakes, Linda Rabbit, Stan Spencer, Lisa Boyd, Rod Rash and John Twoyoungman. Of the Native students, Rod Mark, Stan Spencer, Josy Pakes and John Twoyoungman graduated in 1977.

CHAPTER 1.

THE MORLEY OUTREACH PROGRAM

Evelyn Moore-Eyman
Academic Co-ordinator

On behalf of the Office of Educational Development of the Native Students Services, Carole McInnis interviewed staff and students who participated in the Morley Outreach in 1975-6. Morley is one of the three sites in Alberta on which the University of Calgary provides off-campus education.

From 1973 to 1975 the outreach class at Morley had been limited to students living on the Stoney Reserve but in the third year of this teacher education program six students including one Indian student, commuted from Calgary to Morley to participate in a cross-cultural year. The evaluation interviews conducted by Ms McInnis focussed on both university education on the reserve and on the cross-cultural innovation in the third year.

The Academic Co-ordinator has developed the recommendations which follow from the 75 page transcript of the interviews and from experience in the somewhat later Hobbema outreach program. The summary report by Ms McInnis concludes this section.

The first phase of the Morley Outreach program was completed in 1977 when the B.Ed. degree was awarded to four of the Native students participating in the practicum year which is the subject of this evaluation. A sizeable number of Stoney students have completed one to fifteen of the twenty courses of the degree and a number of new students are now available from among the 1500 people on the Reserve. In the special circumstances then existing on the Stoney Reserve, funding for

continuation of the program was not provided by the Department of Indian Affairs in the Fall of 1977 but may be allocated at a later date.

A schedule of courses proposed for a new intake of students appears as the final page. This program has been deferred because of the current suspension of grants to the Stoney Bands.

CHAPTER 2.

RECOMMENDATIONS by the Academic Co-ordinator

From the report of interviews with staff and students and from subsequent experience in the Hobbema and Grouard outreach the following recommendations are made:

1. Cross-cultural teacher education programs should continue to be offered on reserves, at least to the practicum year of the B.Ed.

2. On-site administration and counselling should be maintained throughout the year. University based organization should not again be expected to replace these in any year of the outreach program. (Vide current practice at Hobbema).

3. To overcome difficulties for beginning teachers that arise from low attendance at Morley continuous teaching for one or two weeks early in Fall term should be arranged at Exshaw, in those classes with a substantial number of Stoney children.

4. If possible a separate supervisor from the Practicum Office should not be appointed; one or more members of the instructional team should take responsibility for the practicum experience (as at Hobbema, 1977). The Practicum Office workshops for co-operating teachers and principals should be held as early as possible in the Fall term. All students might well spend one round of the practicum in Calgary.

5. One university teacher whose responsibilities run throughout the year (e.g. in Educational Psychology or Reading and Language) should co-ordinate the instructional program in consultation with the on-site co-ordinator and take responsibility for establishing relationships between courses where warranted. Once a time-table has been developed to implement this co-ordination it should be changed only in the most exceptional

circumstances and then with considerable advance notice.

6. Further consideration should be given to the desirability or otherwise of blocked time for courses and to whole day scheduling of courses. Both appear to have placed heavy demands on some students while the blocked time was appreciated by others.

7. The professional year should be expanded to include the spring session (as currently at Hobbema). The work load for students with heavy family responsibilities would thus become more manageable. Students wishing to maintain a full course load could undertake additional courses on campus.

8. Consideration should be given to the holding of a weekly seminar to explore the implications of the cross-cultural experience. A social event should be held very early to expedite the process of becomming acquainted across the two cultures.

9. The two required courses in Educational Administration should be taught prior to the cross-cultural practicum year. Instructors in their treatment of the role of the teacher, of the school systems and of teacher organizations should be asked to take note of the differences between provincial and federal Indian schools.

10. Supplementary instruction in scientific method should be introduced into all years of the program. Developmental work to provide sequences of instruction for use in different courses needs to be commissioned as soon as possible.

11. Systematic up-grading especially in reading and English expression should be associated with first and second year courses (with mandatory attendance) and in third year courses

instructors should be allocated further time to devote additional attention to the language of their courses.

12. Additional hours of instruction beyond those allocated by the university should be provided in order to:
    (i) provide supplementary instruction to maintain achievement at the levels of which the Stoney students have demonstrated they are capable;
    (ii) enrich the courses with the appropriate cross-cultural studies.

13. The expectation of full and punctual attendance at classes (except for warranted absences) should be established with first year students and if necessary second year students through a reward system. It would be hoped that attendance patterns would then be established by the practicum year. Nevertheless, as full attendance during the practicum, and preparation for it, is essential to both success and professional reputation, arrangements should be made for supplementary transport and child-care when these are required by emergency situations.

14. Through the on-site staff member the participation of elders and other community members should be increased. University staff should be brought into closer relationship with the Native community.

15. When a new group of students is recruited the sequence of courses should be planned to take into account the following:
    (i) students should be introduced to the following programs in addition to teacher education:
        (a) social work
        (b) administration and business
        (c) recreation
        (d) fine arts

(e) pre-law

(ii) several students have completed one to eight courses in teacher education and should be able to take such courses as will lead to the completion of their degrees in either teacher education or another profession of their choice.

(iii) as with the original program early courses should capitalize upon the special abilities of the students and give an experience in success, (e.g. Art, and Physical Education) but the program should also include reading and study skills and English expression courses.

(iv) Some courses should be modified or special courses should be offered to ensure that fuller attention is given to the distinctive characteristics of Native education in bilingual bicultural situations.

16. A practicum year implementing these recommendations will of necessity involve substantially higher expenditures than the $31,000 spent on the Morley cross-cultural year in 1975-6. e.g. until now almost all instruction in outreach programs has been provided by the willingness of professors to do this work extra to load and at a rate of remuneration which varies from one half to one fifth of that for courses taught on campus. This largely voluntary service may not be permanently available. However, if care is taken to develop a larger student body over the prior two or three years, the cost <u>per student</u> need not be excessive in the practicum year.

PROPOSED MORLEY SECOND WAVE (in half courses)

1977 - 1982

	FALL	WINTER	SPRING	SUMMER
YEAR I 7 half courses INTRODUCTION TO EDUCATION, BUSINESS, SOCIAL WORK, FINE ARTS, PHYS. ED, PRE-LAW.	Effective Writing (required non-credit) ART 231 PHAC #? PHAC #?	ENGL 201 BUS 301 EDCI 201 PHAC #? PHAC #?	SOC 201 S.W. 201	---
YEAR 2 10 half courses	HIST 231 NTVE 202 → ART 233 PHED 200 →	HIST 233 EDCI 203 (media) 	DRAMA 360 and alternatives on <u>campus</u>	---
YEAR 3 9 half courses (10 months)	Some students to campus for Business, Social Welfare, etc. OR Cross Cultural Social Work (human services workers) <u>at Morley</u> + Cross Cultural Education <u>at Morley</u> EDFN 301 HIST 233 ANTH 313	EDPS 301 HIST 431 (Indian) ANTH 311 GEOG 381	EDFN 491 EDFN 519 (<u>on-campus</u> with additional pre-sessional instruction)	---
YEAR 4 MORLEY (10 months) 10 half courses	EDCI 502 EDCI 401 EDPS 413	EDCI 504 EDCI 403 EDPS 411	EDCI 405 EDCI 407	---
YEAR 5 (7 months)	ON-CAMPUS TO COMPLETE 6 COURSES MINIMUM			

AT LEAST TWO HALF DAYS WORK EXPERIENCE PER WEEK THROUGHOUT

CHAPTER 3

EVALUATION INTERVIEWS

MORLEY OUTREACH, PRACTICUM YEAR

Carole McInnis

The summary which follows has been prepared by Ms. McInnis from the seventy five page transcript of interviews with students and staff.

The bicultural education program held on the reserve at Morley was, for the majority of the participants, a useful and beneficial experience. All of the students felt that despite certain geographic and physical problems with the reserve setting, it was essential that a program such as this be carried out in an environment similar to the setting for which they were being academically prepared. Both Native and non-Native students held similar views in most areas covered in the interviews although there were differences in the response to the structure of the program and the use of time. The students from Morley were in agreement on the suggestions for a proposed program at Morley.

The majority of the academic staff were also in favour of holding the courses and practicum at Morley. These primary concerns were pedagogical. They were concerned with the alteration of the courses to fit the specific setting, that is to use the setting as examples to directly apply it to the course material whereever possible. All professors would conduct their section differently were they to do this again.

The major problem with the courses and practicum at Morley was the disorganization of the program. All students were in unanimous agreement about this. They stressed the need for the classes and practicums to be organized well in advance and adhered to. Many of the difficulties experienced in this program would have been eased if a schedule had been posted or given out at the beginning. As it was the students did not know what their schedule would be from week to week. Many times they arrived at Morley to find the plans they expected had been changed. The confusion in this was most strongly felt by the non-Native students who were commuting to the reserve daily.

> "Lecturers should establish rules about the time of classes, due dates of assignments and then stick to them. It is much better for the students this way. More structure is needed."

The practicum at both schools, but especially Morley should be held for an extended period of time. One day a week was not

sufficient to acquaint oneself with the children.

> "Practicum needs to be extended, at least a week at a time, particularly in Morley since attendance is so poor."

Those Stoney students who participated felt that having courses on the reserve was the best arrangement for them and that these courses definitely should be carried out again. It is difficult for them to commute to town particularly if they have children. For the Stoney students the real advantage was the physical proximity of the courses. The females were able to maintain their family responsibilities which would have been impossible were they to have done these courses and practicum on campus. The male students, whose responsibilities differed, also like courses on the reserve since commuting is time-consuming for those with familial or other duties.

Those who travelled to the reserve were in agreement upon the value of the experience.

> "Being in the atmosphere is something you can't be told about."

More involvement with the Stoney people could be useful as would more courses on the history and culture of the area. The non-Native students were enthusiastic and were concerned that the program be offered again. As quoted above, the students felt you couldn't be taught about the reserve, rather it has to be experienced to be understood. To try to conduct this program on campus would be futile.

It was agreed by most participants that holding courses in blocks was best, that is courses should be highly concentrated. This was accomplished in two ways. One course was held one day a week all day for the entire term. Others were concentrated in much the same manner but for a shorter period of time. Although the students found this tiring by the end of the day they preferred this system for the methods courses in particular. Doing the courses in blocks meant

that the methods courses were taught separately and one at a time. The main objecton to the block method was the length of the day, that is by working on one subject from 9-4 students were tiring and sometimes becoming disinterested.

The advantage of taking the courses on the reserve was the class size. The number of students in the classes were small which allowed for personalized instruction and peer group tutoring. Both groups of students felt they were able to help one another in their course work. The Native students helped their non-Native counterparts gain a better understanding of the history and culture of the Stoneys while the non-Natives helped the Native students with an educational psychology course which they found particularly difficult.

The Stoney students unanimously felt they were not prepared for it; that is they lacked the necessary background knowledge to carry out the course. The urban students were not in this position. This view was upheld by the instructor who became aware of this problem as the course progressed. Much individual instruction took place, however it was felt by this professor that the entire degree program needed modification for these students. The differences in educational background were not easily overcome, nor was the present system making use of the skills these students possess. Other instructors agreed with this latter statement; that the students had a great deal of informal knowledge that should and could be incorporated into the courses.

Due to the small number of students in the interview group no concensus as to organization of the practicum could be arrived at. However all students were in favor of the double rural/urban experience. Some felt the urban practicum should have occurred first, others the rural. Most of the methods classes were taught while the students were at Morley. Due to the small and changing enrollment at the Morley school it was difficult to apply many of the techniques taught in the courses. This created problems for the instructors who wanted their students to put into practice in the classroom the methods they were being taught. The constantly changing children in the classes at the

school in Morley made continuity in the instruction impossible. The student teachers had different groups of children each time they taught. This was a major problem with this portion of the cultural program. Teaching one day a week at the school in Morley was not an adequate teaching experience. This was expressed by all participating students. Many suggestions for improving this were made and, in general, it would seem that some sort of graduated in-school teaching experience is desirable.

A practicum that would begin with a few hours in class and develop into a week or more by the end of the first term is representative of suggestions made.

Most students felt that their urban practicum was excellent. They gained a great deal of actual teaching experience here. The condensed structure, that is teaching on a daily basis, was excellent. It enabled the student teachers to see the results of their teaching and to carry out complete lesson plans. This was not possible with the arrangement at Morley due to the flucuating school population and the structure of the practicum.

The co-operating teachers were helpful in both settings, although at Morley, in particular they seemed to be uninformed about what was expected of them. The students felt that their was a lack of communication between the university staff and the teaching staff at Morley; the the co-operating teachers were not sure of their role in the practicum. Some teachers stayed in the classroom and gave useful suggestions. In other cases the student teacher was left in the classroom alone for the entire day. Disturbance over this was expressed by one instructor who suggested a more controlled practicum is necessary. Most students felt unprepared to handle the discipline problems that occurred at both schools.

The university supervisor assigned to this group of students was not satisfactory. He viewed the students teaching for a maximum of 10 minutes and based a report on this. All students expressed an inability to communicate with him. Consequently they were unable to discuss their practicum with him. It was felt that he was not interested in the bicultural program. A university supervisor sympathetic to the particular problems in a rural community would be more useful.

Of the four professors interviewed three were in agreement on pedagogical modification.

> "Pedagogy should be modified to fit the situation. Especially it should be modified to take advantage of the knowledge of the Native people."

Both the science and social studies methods instructors tried to relate their teaching to the particular circumstances of the reserve. The major difficulties encountered here was a lack of time for incorporating regular class material with the special environment of Morley. The methodology course in science had reasonable success in integrating the particular environment with the course material.

> "The strong relationship between the science course and the environment at Morley was very good."

Instructors in the methodology courses recommend a more intensive use of the material at hand to be used as mentioned above and to integrate the courses with the actual classroom teaching experience.

> "The language methods course must be tied to the student teaching experience. There must be a tie between teacher training methods and the classroom teacher . . . I know the pre-service students were getting conflicting ideas from me and the actual teaching experience."

Two professors recommended a restructuring of the education degree for Native students to enable them to acquire the skills necessary to get a degree and to take advantage of the abilities they have as Native people. Another professor saw no purpose in giving courses on the reserve and suggests they be held on campus.

All staff taught the same basic course as they would have on campus. The variations which occurred were of two types:

a) on campus an "enriched" course was taught, that is extra challenges were given to the class to be participated by those who chose.

b) On the reserve an "enriched" course was taught by incorporating current environmental material into the basic course.

These differences seem to be partially determined by the nature of the course subject matter. All courses were considered equal to the same offered on campus by the instructors. Exams in some cases given were the same as those given on campus.

The Morley students were asked to comment upon and recommend improvements for this program on the Stoney reserve. The following are a summary of the points made by these students:

- Education needs to be advertised on the reserve. The University needs to get away from the technical side and really stress the value of university and what it can do for a Native person in terms of training for employment and security. This needs to be carried out in a simple understandable language that the ordinary people on the reserve can understand.

- A variety of courses should be offered on the reserve. Not all students want to be committed to teaching. The people at Morley are interested in a variety of courses, primarily those which are practical as opposed to the critical courses such as social work, physical education, political education and administration.

- The Stoney Cultural Education Program should be involved with the courses. Tutoring services for example, should be available through this program.

- A day-care centre should be incorporated into the same building as the courses are offered to reduce the anxiety of the women with children thereby allowing more females to consider university.

PART III

REPORT

of the

OFFICE OF EDUCATIONAL DEVELOPMENT

NATIVE STUDENTS SERVICES

PART III

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CHAPTER 1

REPORT OF THE OFFICE OF EDUCATIONAL DEVELOPMENT

I.R. Brooks, Ph.D.
Director

POLICY OF THE OFFICE

The Office of Educational Development in Native Education was funded in April, 1975 by a three year grant from the Donner Canadian Foundation (The Annual Report of the Office for 1975-76). Affiliated with the Native Students Services at the University of Calgary, the Office is designed to develop and evaluate innovative projects in Native education both within reserve communities and at the university level. Primary emphasis, however, is placed on developing projects and programs at the invitation of reserve communities and schools.

The expressed policy of the Office is to work in reserve communities only if explicitly invited by the band council, education committee or school. Furthermore, projects are not developed unless the parents and/or educators in those communities feel that it corresponds to one of their high priority needs. The Office does not claim to offer ready-made solutions, but rather attempts to enter into a partnership to develop and evaluate potential solutions.

By using core funding from the Donner Canadian Foundation any any other project funding which can be procured, projects that are designed to meet the educational needs of a specific band, education committee or Reserve school are, at first, developed on a pilot basis. If, after the initial period for trial and revision, the project appears to have merit, information is made available to other communities known to have similar needs and interests. If requested,

assistance is then provided to develop projects in these communities. It is not the policy of the Office to provide program funding on a continuing basis; indeed, the budget does not allow for such funding. Rather it is expected that if reserve schools and communities decide that a project is worth continuing, they will obtain the necessary funding. Moreover, as interest in the work of the Office increases and as, consequently, more demands are placed on the core funding, it is expected that those communities collaborating on a particular pilot project will assist in obtaining funds.

STAFF

Administratively, the Office is headed by a director who reports to both the Donner Canadian Foundation and to the Director of Continuing Education at the University of Calgary through the Academic Co-ordinator of Native Students Services. The staff consists of an administrative assistant, part-time secretarial help and several part-time research assistants who have, in the past, been graduate students at the University of Calgary.

PROJECTS

During the past year, the Office has been engaged in six major projects:

(1) the Achievement Test for Indian Children

(2) a computer-assisted learning project

(3) the compilation of a compendium of adult education programs for Alberta's Native people

(4) an exploration into programs for training the teachers of Native children

(5) the publication of a bibliography and the development of a plan for a computerized information retrieval system

(6) a study of the motivational characteristics of Indian children.

ACHIEVEMENT TEST

Work on the Achievement Test for Indian Children (ATIC) has progressed rapidly and interest in the project has grown accordingly. A revised version of the test battery[1] has been in use in the Morley School during the 1976-77 school year and, as a result of requests from teachers, the test is currently being extended from grades three to five. During the winter, the Office was approached by the principal of the Sir Thomas Simpson School in Fort Simpson, N.W.T. and asked to implement a testing program in that school. As a result of visits to the school and discussions with the Department of Education in Yellowknife, the program will be implemented in September. To meet local needs, minor revisions to the test will be made this summer. Further, discussions have been held with the Four Band Education Committee and school principals at Hobbema, Alberta and with the education counsellor and school principals for the Sun Child-O'Chiese and Crowfoot schools. Arrangements have been made to begin the testing program in these schools in September. Also, through an intermediary, initial contact has been made with the Education Committee on the Blood Reserve.

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[1] For a detailed report, see pages 57 to 76.

COMPUTER ASSISTED LEARNING PROJECT

The Computer Assisted Learning Project is progressing in spite of one or two setbacks which have somewhat delayed progress this year.[2] The computer terminals, located in the Morley School and connected by telephone to the University, forty miles away, were inactive for several weeks due to the installation of a new computer in the Faculty of Education. This delay was followed by the sudden resignation of the teacher most involved in the project. Nevertheless, during these interruptions work has continued with many new programs being written. These programs represent three major improvements: 1) they reflect more closely the school's mathematics syllabus, 2) they form an integrated syllabus unit rather than ad hoc single isolated programs, and 3) they represent a more sophisticated instructional program than most existing CAI programs. Most of the implementation problems have now been overcome and more extensive use of the computer will be made by the pupils next year.

OTHER PROJECTS

The remaining projects have been on a smaller scale. A compendium of Native-oriented education and employment training programs in Alberta has been developed and will be published by the Office during the summer.[3] This work is an extension of the Newman Report (New Man Associates, 1975) on Indian perceptions of

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[2] A detailed report is given on pages 77 to 109.

3 An overview, describing the compendium, is presented on pages 110 to 113.

the human resource development needed on the Morley and Hobbema Reserves. This project reflects the Office's continued involvement in adult education and will, hopefully, lead to program development. One such program development project currently being explored is in the area of health careers or "human service workers" education.

Within the University, the Office has initiated, and funded, bi-weekly meetings of a group from the Faculty of Education who have an expressed interest in Native education. This group, which comprised both students and faculty (both Native and non-Native persons) from all four departments has been examining the desirability of establishing a special "route" in the Faculty for all persons planning to teach Native children. The group has examined Native teacher training programs in Canada and has explored the content areas such a route would need to cover. The group is now ready to crystallize its views; however, its further work depends upon the priorities set by the Faculty of Education and the Faculty's desires to become involved in this area.

BIBLIOGRAPHY

In October of 1976, the Office published a bibliography of approximately 3000 studies in Native Education (Brooks, 1976). This bibliography is currently being purchased both nationally and internationally. Because of the positive response to this publication, the Office has been encouraged to examine ways of continuing this service. Presently, a proposal is being drafted for the establishment of a computerized information retrieval system which

would compile and organize references to all works pertaining to the education of Canada's Native peoples. This would allow for updated supplements to the Bibliography to be published three times per year and would, in effect, establish the Office as the major clearing house for Native education in Canada.

A research study is being conducted by a graduate student of the Department of Educational Psychology, who is also a research assistant in the Office, to explore some of the psychological constructs underlying poor attendance, poor motivation and poor achievement in Indian adolescents in Junior High School.[4] The study is considered to be the first phase of a project to develop a program to improve attendance, motivation and, perhaps, achievement.

Finally, the Office has been involved in preparing the annual report of the Native Students Services at the University of Calgary. This is the Fourth Annual Report of the Services and the third produced by this Office.

For 1977-78 it is hoped that sufficient funds can be obtained to employ a Native person with an undergraduate degree in education or social science to serve as a full-time research associate for the Office. In this manner, it will be possible to provide a qualified Native person with post-graduate level training in the areas of educational program development and evaluation. Also, steps have been taken to establish a small board of Native people to

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[4] A more detailed explanation of the study is given in pages 114 to 126.

advise the Director and assist in establishing general policy.

FUTURE PROJECTS

The major new project planned for the coming year is in the area of curriculum development. Specifically, the project will focus on developing micro-units to be used by Native teacher-aides to supplement the instruction of the teachers. Where appropriate, these units will be bilingual, using the child's Native language as a foundation for further learning. In addition to using the child's first language, the micro-units will allow teacher-aides from the child's community to have a more important role in the school. The teacher-aides, as a result, should be able to assist the non-Native teachers in understanding the learning processes and levels of competency of the children.

The initial grant awarded by the Donner Canadian Foundation expires on March 31, 1978. Thus, a proposal has been submitted to the University of Calgary to establish a Centre for Innovative Projects in Native Education and to provide core funding for its operation. It is hoped that the proposal will be accepted so that the work begun during the first three years can be continued. The response from Native communities to the Office so far, indicates that its work is considered to be both necessary and desirable.

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CHAPTER 2.

ACHIEVEMENT TEST FOR INDIAN CHILDREN: A PROGRESS REPORT

I.R. Brooks, Ph.D.
Director, Office of Educational Development

CHILD'S LEVEL OF ACHIEVEMENT

Professional educators have long recognized that both curriculum development and classroom instruction must take, as a starting point, the child's current state of development and level of achievement. Indeed, nearly all models of teaching require that the teacher begin with an assessment of the child's entering behavior. Moreover, the need to begin "where the child is" is even greater in the case of "educationally disadvantaged" or "culturally different" children than it is with White middleclass children in the mainstream culture. Many Native leaders, in expressing their concern over the "failures" of Western schools, have pointed to the assessment of entering behavior as a major area of weakness. Hence, two years ago a member of the National Indian brotherhood stated that the present education system "starts where the Indian child isn't, and proceeds from the unknown to the unknown."

That there is a need to assess the entering behavior of Indian children in the classroom and, for that matter, his terminal behavior at the end of the school year, has been recognized for some period of time. Generally, two approaches have been taken to meet this need. The first has been concerned with developing "culture-fair" tests which could assess both general intellectual functioning and specific

intellectual abilities in Native children. Although this approach has yielded many useful results, it has not, on the whole, been able to furnish information readily useable to teachers or local curriculum developers. The second and most commonly employed approach has been to administer published standardized achievement tests. Because these tests were designed for White middleclass children, they tend to be biased against Native children and therefore set them at a disadvantage. Although nearly all teachers recognize the inherent biases of such tests and attempt to be judicious in their interpretation of the test results, the error variance, resulting from language difficulties and unfamiliar content, tends to be so great as to yield results of extremely low reliability and validity. Consequently, judiciously interpreted or not, the results from these tests are of very little value.

Hence, on the one hand, because some Native children come to school with a greater exposure to English than others, or come from homes which support educational achievement more than others, or attend more regularly than others, or because some begin school at age five whereas others may not start until age eight, there is a wide range of individual differences within any class of Native children. Thus there is a great need for a suitable assessment and placement test. Yet, on the other hand, the published tests which are available rely heavily on complex verbal instructions, and assume that Indian children are familiar both with the nature of the task to be undertaken and the informational content required to do the task. Therefore these tests are

not appropriate for assessing the entering behavior of Indian children.

TEST DEVELOPMENT PROJECT

In light of the foregoing, the Office of Educational Development in Native Education at the University of Calgary has undertaken the development of an assessment and placement test which will be suitable for Indian children in grades Kindergarten to five. The project began in the Spring of 1976 when the teachers at the Morley Primary School on the Stoney Indian Reserve in Alberta asked for assistance in assessing the achievement of their pupils. Initially, teachers in grades Kindergarten to two were consulted to determine the essential skills and knowledge taught in these grades. The educational objectives of the primary teachers were then structured into a sequential hierarchy of required skills and a battery of tests was developed to assess mastery of these skills. The Achievement Test for Indian Children (ATIC) was pilot tested in September of 1976 with approximately 80 Indian children ranging in age from four to nine. It should be noted that the general format of ATIC, which requires the use of pencil and paper, was pilot tested in the Spring of 1976. After establishing that all children, including several four year olds, could attain a perfect score on a simple task, it was concluded that the format was workable.

Following the full-scale pilot testing, pupil profile sheets were constructed to show the patterning of strengths and weaknesses in each child. Moreover, the pupil profile sheets were used

to group the children into four instructional groups which were then compared to the classroom groups already in existence. It was interesting to note, that in nearly 80% of the cases there was agreement between the two methods of grouping; however, several students were regrouped on the basis of their test results. In many cases, children were moved into a higher group because it was found that they were functioning at a higher level than had been previously estimated. This, again, demonstrates that without suitable assessment techniques, the performance of many "educationally disadvantaged" or "culturally different" children is underestimated.

The results of the tests have been subjected to a detailed statistical item analysis by the test developers and also to an in depth interpretive analysis by the classroom teachers. The results of these analyses have led to considerable modifications to the original battery. As a result, a second version of ATIC is currently being administered to the Stoney children. Furthermore, work has begun to extend ATIC into grades three to five and it is anticipated that the expanded version of the test will be operational by September of 1977.

TEST DESCRIPTION

For some time it has been recognized that group testing is appropriate neither for young children, nor for children of any age who lack experience with school-type activities. Consequently, ATIC has been designed to be individually administered to each pupil by the classroom teacher. Further, ATIC is

organized into a series of levels with each level containing several subtests which tap those essential skills identified earlier by the teachers. Thus, ATIC is criterion referenced so that the teacher begins by administering one level of the test thought to be appropriate for the child. If a satisfactory performance is obtained, the child is judged to be operating at that level; however, should the performance be unsatisfactory, the next lower level is administered. This continues until the child's level of achievement has been identified. Similarly, should the child demonstrate a superior performance, he is judged to be performing at above that level and is administered the next higher level. The criteria for judging a performance to be superior, satisfactory, or unsatisfactory have yet to be established. It is anticipated that these will be established empirically, based on the performance of the children in the school.

In addition to being able to identify the child's general level of performance, by using a pupil profile sheet it is possible to gain a picture of the child's strengths and weaknesses. From Figure 1, an example of a pupil profile sheet obtained in the pilot testing, it can be seen that this particular child is performing consistently above average in all areas tested. By way of contrast, Figure 2 shows the performance of a child who is performing above average in those areas involving perceptual and numerical skills, but who is below average in the areas involving English language. The pupil profile sheets, then, provide the teacher with information concerning the individual strengths and weaknesses of the child and

FIGURE 1

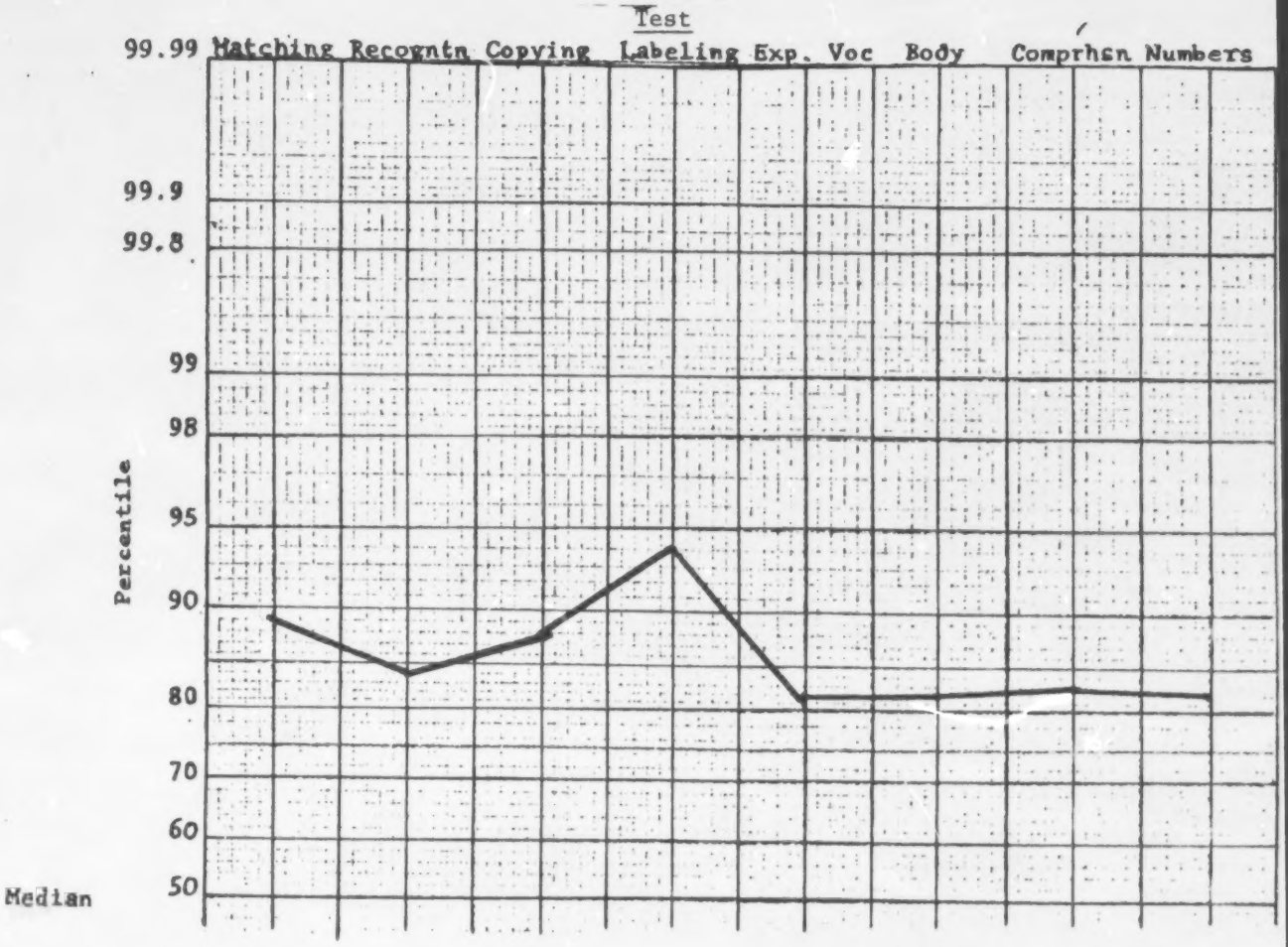
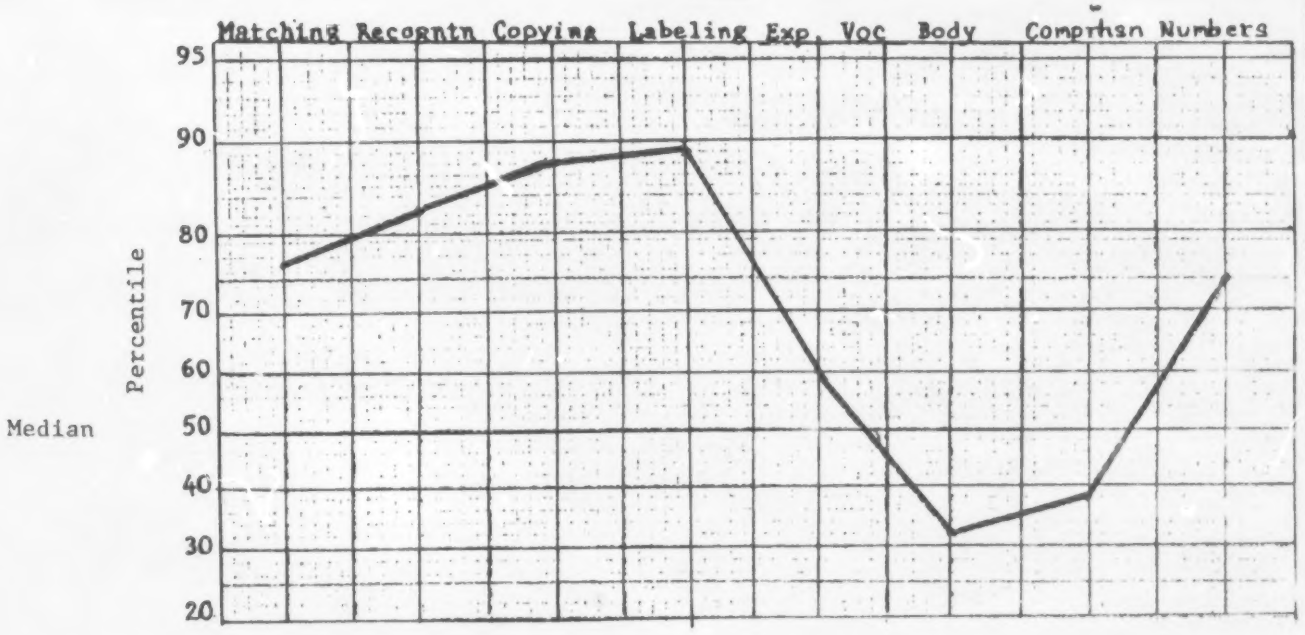


FIGURE 2



should, thus, lead to more individualized instruction. It should be noted that the teachers at Morley have found the pupil profile sheets to be most useful in determining what needs to be taught to their classes as a whole. They report that by looking at the profile sheets of a class of children they have discovered areas of skill development which were weak for all students and which, therefore, required immediate attention. Hence, it is anticipated that with continued use of the test it will be possible to provide test users with examples of different patterns of achievement and with information about the instructional strategies and curriculum developments that can be used with such children.

At each level the test covers five broad areas; viz. perceptual and motor skills, English language competency, number and arithmetic skills, language arts, and problem solving skills. Moreover, several subtests are used to assess competency in each of these broad areas. Since ATIC aims to reflect the curriculum of the school, the content used in the tests involves colors, shapes, numbers, letters, and words.

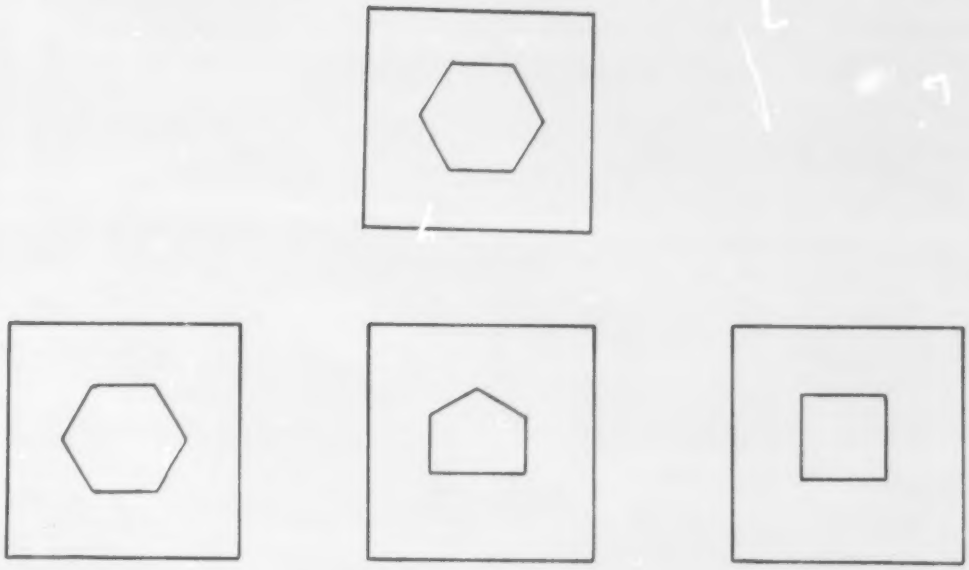
PERCEPTUAL-MOTOR TESTS

Perceptual-motor activity has been subdivided into three specific skills, with the first of these involving Matching. Figure 3 shows an example of a typical matching task. It is explained to the child and demonstrated through practice items that the task is to match the stimulus in the top box with an identical stimulus in one of the bottom boxes. Hence, in this case the child is

to draw a line connecting the hexagon in the top box with the hexagon in the bottom left hand box.

It should be noted that each of these items is presented on a separate page and that each page is a different color from that preceding it. Thus, because the child does not have to deal with several items on the same page and because the child can see a clear distinction between each item and the one preceding it, the format proves to be quite workable. Also, the first items areso simple and the task so obvious that little verbal instruction is required. Consequently, it is usual for the verbal instructions to be given in English; however, it is quite permissable to give these instructions in the child's native language if it will facilitate his understanding of the task.

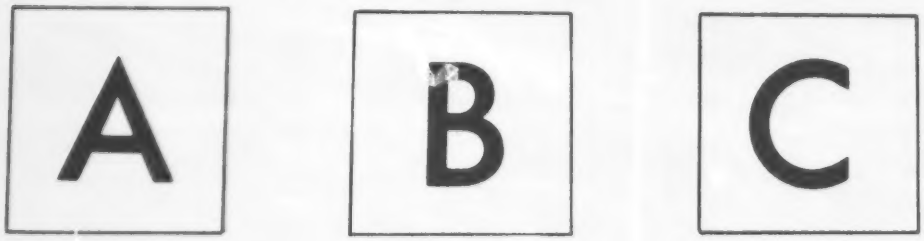
FIGURE 3



RECOGNITION TEST

The second test involving perceptual-motor activity is considered to be more difficult than Matching. As can be seen from Figure 4, in the Recognition test the child is presented with three stimuli, be they color, shapes, numbers, letters, or words and is asked to identify one particular stimulus. Hence, the tester might ask the child to "Show me the letter B." Again, the test can be administered in either English or the child's native language, depending upon whether the purpose is to assess the child's ability to identify colors, shapes, etc., or to assess the child's recognition of the English names for these stimuli.

FIGURE 4



COPYING TEST

The final test in the perceptual-motor realm involves the ability to copy figures. Whereas in the Matching test the child was asked only to show that he could see the similarity between two stimuli, in this particular test the child must reproduce the stimulus shown to him. The copying task has two purposes: first, it shows the teacher whether the child has the motor

skills necessary to work in the media of letters and numbers. Secondly, from a psychological point of view, it provides some indication of the child's development in the area of perceptual skills. Hence, in addition to the content areas included in the other tests and, as can be seen from Figure 5, some of the items included were designed to yield information about the child's developmental progress.

FIGURE 5

LANGUAGE TESTS

The first test in the language area is a further extension of the Recognition tasks in the perceptual motor realm. In this test, as can be seen from Figure 6, the child is presented with a color, letter, number, etc., and is asked to identify it by providing the appropriate verbal label. For example, in Figure 6 the teacher would ask "What number is this?" Again, the testing can be done in either English or the native language depending upon the

FIGURE 6

Vocabulary acquisition is, of course, a major component of language learning. Further, there are two "types" of vocabulary, the first being receptive vocabulary and the second expressive vocabulary. The former involves those words which the individual recognizes but perhaps does not use. In the latter category are those words which the individual is able to use. In ATIC, receptive vocabulary is assessed by showing pupils a series of pictures and asking them to identify the picture demonstrating the concept or word being tested. Thus, for the first series of pictures shown in Figure 7, the child would be asked "Show me the picture of the boy sleeping". Or for the second series of pictures in Figure 7, the child would be asked "Show me the picture of the girl behind the chair". By using the format illustrated in Figure 7, it is possible to use this test to assess the child's understanding of nouns, verbs, adjectives, adverbs and prepositions. In short, the test can be used to assess the child's understanding of basic concepts.

The format of the expressive vocabulary test is similar to that used in labeling. Thus, the child is shown the picture of an object and asked to provide the appropriate English word. For example, for Picture A in Figure 8 the child would be asked "This is

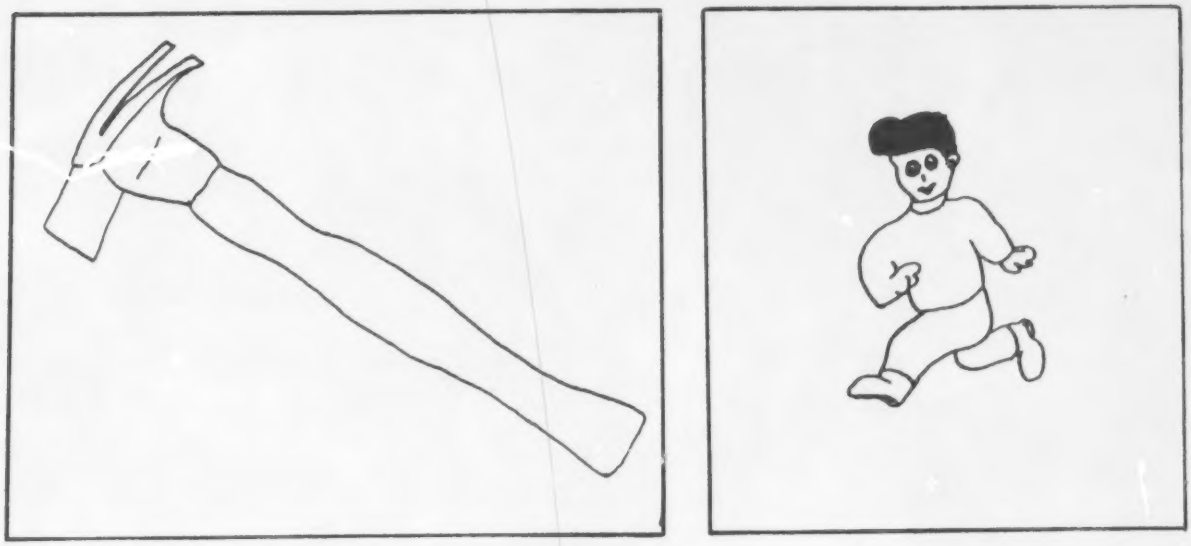
Figure 7 Series 1

Figure 7 Series 2

FIGURE 7

a _____?" and would be expected to reply, hammer. Similarly, for Picture B in Figure 8 the teacher would state "This boy is _____?" and the child would be expected to reply, running. The expressive vocabularly test cannot assess as broad a range of words as can the receptive vocabulary test because the task becomes quite ambiguous if adjectives, adverbs, and prepositions are used. Thus, the expressive vocabulary test is limited to assessing the child's ability to use nouns and some verbs.

FIGURE 8



The primary role of both the receptive and expressive vocabulary tests is to assess the child's knowledge of English vocabulary. On the other hand, in many cases it may be advisable to assess the

child's level of vocabulary development in his first language. Where the child's grasp of basic concepts appears to be rather limited when the child is tested in English, the teacher may wish to determine whether the child is having difficulty with the concepts per se or is just having difficulty with the English labels. For example, in a case where the child understands the concept "behind" when tested in his first language, the teacher's task is merely to provide the child with the English word "behind"; however, should the child not understand the concept, even when tested in his first language, then the task is to provide the child with appropriate experiences to facilitate acquisition of the concept.

The next test in the series of language-related tests is concerned with assessing the child's knowledge of parts of the body. In this test, the child is shown a picture of an Indian child and is asked to identify 20 parts of the body. For example, the teacher might state "Show me the arms" or alternately "Show me the eyebrows". Again, testing can be done in either English or in a native language depending upon the purpose of the testing.

The final test in the language area is concerned with functional auditory comprehension. This test, which assesses the child's comprehension of conversational English, provides teachers with an estimate of the child's ability to follow instructions, understand short passages, and reply to questions. In the first part of the test the child is presented with a box, a quarter, a handkerchief, a pencil, and a block. After naming the objects, the child is

presented with a series of instructions ranging from "Give me the quarter" to "Put the handkerchief, pencil and block but not the quarter into the box". The child's performance on this part of the test indicates the level of complexity of instructions that the child can follow.

In the second part of the test, the child is told a short story, and following the story is shown a series of pictures. The teacher then asks the child to indicate which pictures shows some particular activity or event described in the story. For example, for the series of pictures shown in Figure 9, the teacher would say "When the day came, John's father rode his horse to the rodeo but John rode in the truck together with all his friends from the reserve. Show me how John got to the rodeo". The child would then be expected to point to the first picture in the series, showing people riding in the truck.

In the third and final part of the functional auditory comprehension test the child is asked a series of sensical and nonsensical questions to which he must respond by either verbally or nonverbally indicating yes or no. Hence, the child might be asked:

1. Are you a boy?
2. Do horses go to school?
3. Does a clock show the time?
4. Do trains eat grass?

ARITHMETIC

To date, two tests have been developed in the arithmetic area. The first is concerned with

FIGURE 9

basic number facts and involves such activities as counting dots, counting by twos, tens and hundreds, reading numbers, place value, and questions concerning greater than and less than. Figure 10 shows examples of the tasks involved. Again, testing can be done in either English or the child's native language. The second test which is concerned with arithmetic operations, assesses the child's understanding of concepts related to time, money and measurement.

LANGUAGE ARTS AND PROBLEM SOLVING

The tests in the two remaining areas, that is to say language arts and problem solving, are currently being developed. It is anticipated that within language arts emphasis will be placed on such reading skills as word attack skills, phonetics, sight vocabulary, and reading for comprehension, and also on spelling and written expression. Within the area of problem solving, the goal is to design a test which will provide information regarding the child's ability to solve increasingly complex problems involving verbal and numerical logic. Hence, such activities as identifying the problem, identifying the relevant variables, manipulating the relevant variables, and stating the solution, will be involved. It is anticipated that the tests in these areas will be operational by September, 1977.

CONCLUSION

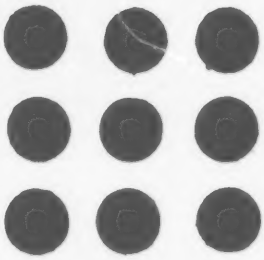
In summary, the Achievement Test for Indian Children is comprised of a series of subtests designed to assess competency in those basic skill areas considered to be prerequisite for further learning.

FIGURE 10

Count the dots.

Show me five fingers.

Circle the number showing how many dots there are.



9 10 8

Which is more, 22 or 6?

Which number comes before 76?

34 is ____ tens and ____ ones.

These subtests are organized into levels which are criterion referenced. It is anticipated that the basic test will be modified to reflect the specific curriculum goals in each of the schools in which it is used. Attempts have been made to restrict the language component of ATIC except, of course, in those subtests where language is the focus of the testing. Overall, the testing program has attempted to adjust its focus to reflect the emphasis placed on second language learning and reading. In general, test results will enable students to be grouped upon admission to the school according to their level of achievement and will furnish information for decisions regarding the instruction and promotion of students. More specifically, ATIC provides teachers with an assessment of the strengths and weaknesses of each child and, thus, should facilitate the individualization of instruction.

Finally it should be noted that with continued use ATIC may contribute to the discovery of solutions to many of the problems which perplex both parents and educators of Indian children who are concerned with improving the quality of education in reserve shcools. For example, ATIC is designed to provide information as to the entering behavior of the four or five year old child. Consequently, education committees and teachers will have access to base line data from which curriculum development can proceed. Related to this, ATIC will provide information concerning the competencies of children who are eight or nine years of age or even older when they first enter school. Comparing the test performance of this group with that of

the younger school entrant it should be possible to identify those skills which are lacking. Consequently, both curriculum developers and teachers will be better able to meet the specific needs of these children and not consider them to be at the same level of achievement and development as a four or five year old. These are only two examples of the many spin offs in the areas of curriculum development and innovations in teaching which can result from the use of an appropriate assessment device. Hence, it should be remembered that testing is never an end in itself but rather a means by which information can be gathered and used to further the educational progress of the child.

CHAPTER 3

COMPUTER ASSISTED INSTRUCTION WITH NATIVE CHILDREN: A PILOT PROJECT

H. Huang,
Co-ordinator

The many Native newspapers now published in Canada frequently contain articles lashing out at the high drop-out rates, poor attendance patterns, and low academic achievement associated with Native education. These concerns are quite justified, for it is commonly found that Native children drop out more frequently than White children, show considerable "age-grade retardation" and score below White norms on standardized achievement tests. Moreover, the adult Native population has completed dramatically less schooling than their non-Native countrymen (Hawthorn, 1966; Stanbury, 1975).

Figures provided by the Department of Indian Affairs indicate that the rates of retention from grades 1 to 12 from 1958-59 to 1969-70 varied from 7.7% in Quebec to a high of 18.4% in Ontario. The comparable rates for the non-Native population ranged from a low of 46.2% in Nova Scotia to 88.4% in Alberta (Stanbury, 1975). Usually, one-half of the Native children beginning grade one drop out before grade eight or nine (Stanbury, 1975). Correspondingly, the pattern of educational achievement is equally depressing. Stanbury, who provides a very detailed account of Indian educational attainment in British Columbia, reports that according to the 1971 census, 79.6% of all people whose first language was an Indian or an Inuit language and who were over 20 years of age,

had no more than an elementary school education (as compared to 36.8% for all Canadians). Only 5.5% had any university training as compared with 27.3% for the country as a whole (Stanbury, 1975). Furthermore, studies of school achievement commonly show that Native pupils "lag behind" their White classmates and fall further behind with increasing years in school. Comparisons of the performance of Native and non-Native children score below White norms.

There is much informal evidence, mostly from teachers, to suggest that the most successful programs or lessons in Native schools are those which allow for individualized instruction, immediate feedback to the pupil and continuous progress. Moreover, these lessons are usually highly structured, hierarchically organized and involve as much skill and practice as the pupil requires. These "key" elements of successful lesson planning are also common to computer assisted instruction (CAI) and, therefore, it was decided to attempt to use this approach with Native children. To begin, the project was designed for pupils in grades four to nine and in the subject area of mathematics.

RELATED COMPUTER ASSISTED INSTRUCTION PROGRAMS

Many known CAI projects, models and teaching systems have been developed during the past ten years throughout the world, particularly in mathematics at the elementary or Junior high school levels. Few CAI systems in mathematics, however, have been developed for use with Native children. For background information, a description of several CAI projects will be given. This will be followed by a report or two which have involved Native children.

Since the advent of computer assisted instruction, research and development of CAI systems have proceeded rapidly. Some of the more important developments in school mathematics programs, in both CAI and related areas, are described below.

STANFORD UNIVERSITY PROGRAM

One of the major programs in computer assisted instruction, which was developed at Stanford University, provides examples of the various methods of integrating a computer system into an educational setting. The most extensive Stanford program is a drill-and-practice program in arithmetic. The program was designed to drill and review students on concepts previously taught by the classroom and, thus, the program served to reinforce classroom learning. When the computer was used was determined solely by the teacher, according to the instruction of mathematical concepts in the several text series used. There were 20-27 concept blocks for each grade level, and each included a pretest, five days of drill, and a post-test. Sets of review drills and review post-tests were also available in each block.

The level of difficulty of the first day of drill was determined by the student's performance on the pretest. The level of difficulty of each successive drill in the same block was determined by the student's performance on the preceding day's drill. Thus, if the student's performance on a drill was 88 per cent or greater, his next drill was one difficulty level higher. A score of less than 60 per cent would branch him down a level for the next drill. Otherwise, the student would remain at the same difficulty level.

BRENTWOOD TUTORIAL PROGRAM

Another CAI project, the Brentwood Tutorial Mathematics Program, is in direct contrast to the drill-and-practice approach developed at Stanford.

The Brentwood system was developed to teach mathematics to first grade children and the computer program was completely integrated with the classroom work. Curriculum material was presented by audio and visual displays and pupils responded on a standard Keyboard or used a "light pen" to touch one of the answer choices displayed on a cathrode-ray tube. Because the programmed lessons were tutorial, many of the lessons were explanatory, relying on oral presentations synchronized with changing visual displays. The lessons were short, usually less than ten problems, and explanations were simple and direct. The mode of branching used permitted students to progress at their own rate. Thus, not all students were required to work on the concept block at the same time.

NEW YORK CITY CAI PROGRAM

A third report, the New York City Project, started in 1968 and was the largest of its kind in the United States. This project was initiated by a grant from the U.S. Office of Education under TITLE III of E.S.E.A.. Hence, its overall objective was to include the planning, development, implementation, and evaluation of a computer assisted system which offered fundamental curriculum skills to pupils in conventional urban elementary schools. The project started with 100 terminals in six urban elementary schools. Programs provided individual drill and practice

in mathematics. In 1969, the project was expanded to include 192 terminals in 16 schools involving 6,000 students in grades 2 through 6. In addition, a "dial-a-drill" program using a PDP-8 Computer connected to home telephones, provided mathematics lessons to 2,200 students in their homes. An evaluation study showed that students using the CAI obtained higher marks in most grades, and attained significantly higher scores on achievement tests than did non-CAI students. These results were consistent with the numerous reports from teachers that CAI students seemed to perform better than non-CAI students.

THE PLATO PROJECT OF THE UNIVERSITY OF ILLINOIS

The University of Illinois has been experimenting with a CAI system (PLATO) since 1962. This type of economically viable large-scale computer assisted instruction system has evolved from a single terminal to a classroom using 20 graphic pictorial terminals. The system has been used in tertiary level courses in electrical engineering, geometry, biology, algebra, mathematics drill, and computer programming. Teaching strategies have ranged from drill-practice programs to student-directed inquiry. In 1969, the system provided 70,000 student-contact hours of credit teaching and approximately 800 student-contact hours each week.

The teaching versatility of a large scale computer such as PLATO IV is extremely large. It is reported that even when teaching 4,000 students simultaneously, the computer can take advantage of idle time to perform data processing. Thus, the approximate computer cost of 10 cents per student-contact-hour is recovered from the computer even though the

computer utilizes only one-sixth of its computational capacity.

OISE PROJECT

Another system designed for tertiary education, the OISE Project (Ontario Institute for Studies in Education), has concentrated on teaching prerequisite mathematics skills for college students displaying deficiencies in mathematics. The goals of the project were to (i) fill the need for high quality, individualized diagnosis of deficiencies in mathematics skills at the community college level; (ii) provide individualized remedial instruction in these skills; and (iii) do so at a reasonable cost.

The OISE prerequisite mathematics skills program has become a well known model in Canada. Its special design, such as the hierarchical structure of instructions, Wald's sequential probability ratio test, and various types of criterion-referenced tests, make it useful as a model for designing elementary and junior high mathematics curriculum.

CAI MATHEMATICS PROJECT OF LEEDS UNIVERSITY

The CAI project at Leeds, England, set up in 1969, was oriented to research rather than to provide service teaching, although the long term underlying aim has been a practical one; namely to institutionalize the computer as a teaching device within a school and within some university departments. The main emphasis of the research has been to develop adaptive teaching methods which optimize learning by relating teaching methods to the type of learning task and to profiles of students' performances.

The Leeds University mathematics project has three features of interest. Firstly, the computer keeps individual records which are

accumulated during past sessions together with a marker which indicates a student's present position in a lesson. Secondly, the computer generates both lessons and remedial materials. A lesson specification has parameters or constraints which determine the form and difficulty of the questions. The simpler remedial questions are also generated and based on particular errors the student has made. Thirdly, the junior mathematics program concerns methods of conducting student teaching.

There is increasing evidence of the benefits that result when task difficulty is continuously adjusted to the competence of the learner, so that any particular student at any competence level works at a specified level of success. Another main principle of instruction is that feedback facilitates learning by locating errors and by providing the student with specific information on how to remedy them.

COMPUTERS IN NATIVE EDUCATION

One of the two CAI projects involving Arctic pupils was conducted by John Hart, professor of Computer Science at the University of Western Ontario. Hart reported on a five year program linking a PDP-10 computer in London, Ontario to a terminal at Inuvik, N.W.T. (Hart, 1975). The first experiment started in the summer of 1970, and despite the difficulties in signal transmission which existed at that time, the experiment was technically a success. The project was designed for Eskimo and Indian children in senior elementary or secondary schools. The course content varied from simple questions in arithmetic to sophisticated sequences related to knowledge of computers. Some attention was given to the design of courseware considered to be appropriate in non-Western

societies to facilitate school achievement. It was pointed out, however, that the involvement of Native people in the initial stages of the project was essential to ensure that the programs reflected the cultural patterns and values of the students.

Another project using CAI with Indian pupils was conducted in the Southwestern United States (Suppes, 1975). The pupils were in grades four to six in a Bureau of Indian Affairs (BIA) school. Students received at least one 10-minute session of the IMSS language arts curriculum daily. The project ran for 60 school days during the 1972-73 school year. Each student's performance was examined daily to determine if he needed one or two mathematics strands sessions on the next day in order to reach the grade-placement set for him.

The Indian pupils were initially described as being generally ill-equipped to cope with the values and content of middle-class anglo education when presented in traditional classroom ways. The project showed, however, that including regular drill-and-practice computer assisted instruction in the mathematics curriculum was an effective method of improving the achievement of these pupils.

These and many other computer assisted instruction programs have shown the benefits which result when a subject area, such as mathematics, is broken down into small units and hierarchy organized, and is presented with the task difficulty adjusted to the learner's competency. Hence, one of the advantages of computer assisted instruction is that it leads each individual into appropriate paths of learning related to his competency. This type of computer regulated

procedure can be relatively easy to implement in most types of classrooms.

THE COMPUTER ASSISTED INSTRUCTION PROJECT IN MORLEY

The Morley CAI Project was established in the Elementary School on the Stoney Indian Reserve at Morley, Alberta in 1975. With the cooperation of the Computer Applications Division of the Department of Educational Psychology at the University of Calgary, a computer terminal was installed at the school and linked via a "foreign exchange" telephone line to the computer in the Faculty of Education at Calgary. At the same time, a research assistant was hired to supervise the introduction of the terminal into the classroom and also to develop specific programs to meet the requirements of the school.

It is well recognized that Western schools have been notably unsuccessful in the education of Native children and it was assumed that one contributing factor to this lack of success is the difference of cultural background between Native students and their teachers. The application of the general pedagogy practiced in Canada thus needs to be re-examined in order to meet the Native viewpoint of schooling. Consequently, the design of the project was developed, with assistance from the teachers of the Morley School, according to the typical learning behaviours, needs and difficulties observed with the Stoney pupils.

The school year 1975-76 was used as a trial period and during this time a teletype terminal was brought into the school. Several teachers in the elementary grades were trained in the use of the computer terminal as were several Native adults who, at that time, were working in the school. At the conclusion of this period, the teachers reported

that the computer was both a popular and useful aid to instruction; however, some problems were found to exist with both the terminal used and with the existing programs. The teletype terminal was found to be too noisy for use in a classroom and also too limiting in its ability to present visual material. With respect to the courseware, the "log in" procedure required was found to be too complex. Further, although many of the programs were suited to the needs of the school curriculum, they were not integrated in any meaningful fashion. Consequently, teachers reported considerable difficulty in integrating the computer courseware into the classroom curriculum.

To overcome these difficulties, a CRT terminal has been installed in the school. Further, connecting the terminal to a new computer in the Faculty of Education at the University of Calgary has resulted in a much simplified "log in" and "log out" procedure. During the year 1976-77, considerable time was spent developing more relevant instructional programs. Focussing on the mathematics curriculum for grades four to six, a series of three programs has been developed for each of 12 mathematics objectives. These programs, which are interrelated, provide for pre- and post-testing, instruction, survey testing, and drill and practice.

THE SPECIFIC DESIGN OF THE CAI SYSTEM DEVELOPED FOR STONEY INDIANS

A computer program must be descriptive if it can be used by teachers to aid individualized instruction or group teaching in the classroom. Also, it must be

prescriptive if decision-making is involved with students in the learning process. It must also be cyberetic or response-sensitive, if it is to be an adaptive system which can vary according to the students' abilities. The ultimate goal is to ensure that the student can become an efficient self-learner. The computer program or model designed for the Stoney Indian students is designed to possess all of these characteristics.

The design of any computer assisted instruction package must take into account not only the immediate external environment stimulating the learner, but also the capabilities that the learner brings with him. Effective learning is facilitated by arranging intellectual skills and concepts in an hierarchical order. Beginning with a particular objective, the learning hierarchy shows which of these skills and concepts are prerequisites for further learning. The prerequisite for each of those objectives is in turn indicated, and the process continues until one has listed the most elementary skills and concepts that need to be mastered.

Table 1 shows the hierarchical order of the mathematics objectives on which the Morley program is based. These concur with the hierarchical structure of the school textbooks "Elementary School Mathematics, Book 6; Exploring Modern Mathematics;" and other recently developed individualized Mathematics Curricula for grades 5, 6, 7, 8 or 9.

The mathematics objectives of the computer program are arranged in an hierarchy with the skeletal and conceptual objectives presented in a parallel pattern. This reflects the assumption that the two are closely

Table 1

List of the Objectives
of the Mathematics CAI Programs at Morley

OBJECTIVE 1: place value and inequalities. Provides for the learning of the concept of number and its value system, such as the decimal numericals, binary or others. It also provides the concept of the differences of values.

OBJECTIVE 2: involves the basic concept of the balance, equality and the logic of operations.

OBJECTIVE 3: presents the laws of operation such as Commutative, Associative, and Distributive in the form of addition.

OBJECTIVE 4: presents addition, subtraction, multiplication and division with one and two digit numbers.

OBJECTIVE 5: develops the basic skills of all operation but stresses on accuracy.

OBJECTIVE 6: involves the concept of set theory.

OBJECTIVE 7: introduces a general concept of factorization.

OBJECTIVE 8: presents the concepts of Prime number and Composite number.

OBJECTIVE 9: introduces the concepts relating to fractions.

OBJECTIVE 10: presents the operations of inequalities.

OBJECTIVE 11: develops the skills of performing two digit Addition and Subtraction.

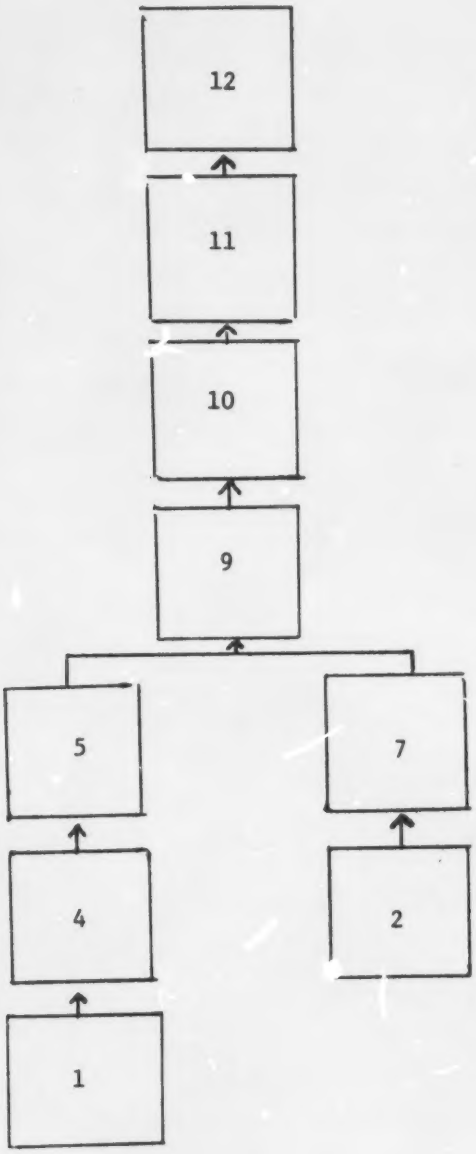
OBJECTIVE 12: introduces the skills of operating two digit decimal numbers.

related and should be organized side by side (see Figure1). Each number of Figure 1 refers to the corresponding objectives of Table 1; for example, 1 in Figure 1 represents the first objective in Table 1, 2 in Figure 1 represents the second objective in Table 1, and so on. The computer code-names and topics of the objectives are shown in Table 2. For example, MOR1SO, MOR1S1, and MOR1S2 refer to objective 1 or topic 1 which concerns place value and inequalities. The Code-Name "MOR1SO" is a brief form of MORLEY, 1st objective, Sub-program, Of instruction and drill-practice. Hence "MOR1S1" stands for MORLEY School, 1st objective, Sub-program and 1 for survey. Other code names of objective are formed according to the middle number of the code such as 2 for the 2nd objective, 3 for the 3rd objective, and so on.

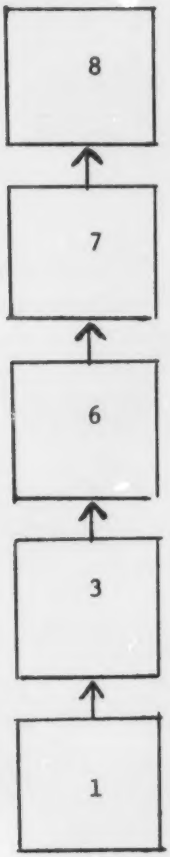
As the child enters a particular programmed mathematics objective, he is administered a pretest which measures his proficiency in the skills contained in the objective. An objective is said to be sufficiently mastered if the student demonstrates that he has achieved some minimum level of competency in the skills listed. If he does not possess this required competency, his deficiencies or weaknesses are detected and recorded and he is then branched to the remedial routine, the instruction and the drill-practice sub-program. This type of branching is done by the computer automatically. If his achievement falls into a "neutral zone", that is to say on the boundary line between mastery and non-mastery (See Figure 10 in Appendix 1) and he is confident enough to believe that the post-test can be mastered, then he may enter the self-evaluation sub-program which is the survey test. This procedure often provides increased motivation for students as they are able to proceed

FIGURE 1 - A HIERARCHY OF INSTRUCTIONS

1. Skeletal



2. Conceptual



An hierarchy of instructions of prerequisite relationships among the objectives exists. The branching procedure is designed in referring to Wald's Probability Criterion Reference to take maximum advantage of the hierarchical structure. For example, if an examinee has 85% or above correct response in objective 1, he is branched to objective 5, otherwise he is branched to objective 4.

TABLE 2 - COMPUTER-CODE OF OBJECTIVES

CODE	OBJECTIVES
MOR1S0 MOR1S1 MOR1S2	Place value and inequalities
MOR2S0 MOR2S1 MOR2S2	Equations and operations
MOR3S0 MOR3S1 MOR3S2	Comutative principle and operational orders.
MOR4S0 MOR4S1 MOR4S2	All operations
MOR5S0 MOR5S1 MOR5S2	Computing
MOR6S0 MOR6S1 MOR6S2	Union and intersection of sets
MOR7S0 MQR7S1 MOR7S2	Factors
MOR8S0 MOR8S1 MOR8S2	Prime numbers
MOR9S0 MOR9S1 MOR9S2	Fractions
MO10S0 MO10S1 MO10S2	Inequalities
MO11S0 MO11S1 MO11S2	Addition and subtraction
MO12S0 MO12S1 MO12S2	Decimals

as soon as they feel ready to do so. Thus, the post-test may be taken after the student has gone through either the remedial routine or the self-evaluation routine. Then, a comparison of the pre-test and the post-test scores can be made to obtain an indication of his progress. Again, his errors and areas of weakness are recorded. Hence, this system stresses not only automatic branching, but also introduces a role for the student's personal preference in the decision making process.

The Morley School system is considered to be a computer-aided, rather than a computer-directed system. The branching rules employed by this system are designed to take maximum advantage of the assumed relationships among the objectives. If a student has shown proficiency in one objective with almost no incorrect solutions, he should be branched directly through the hierarchical sequence.

The number of items to be tested within an objective is a function of the item-sampling procedure. The number of correct answers of items is the function of the external branching rules (See Table 3). An item is a question which is randomly generated, and all the items are chained according to the rules of branching. A more detailed and technical description of the item sampling procedure used is given in Appendix I.

Each mathematics objective of the computer program contains three sub-programs; Instruction and Drill-Practice, the Pre and Post-Tests, and the Survey tests (See Figure 2).

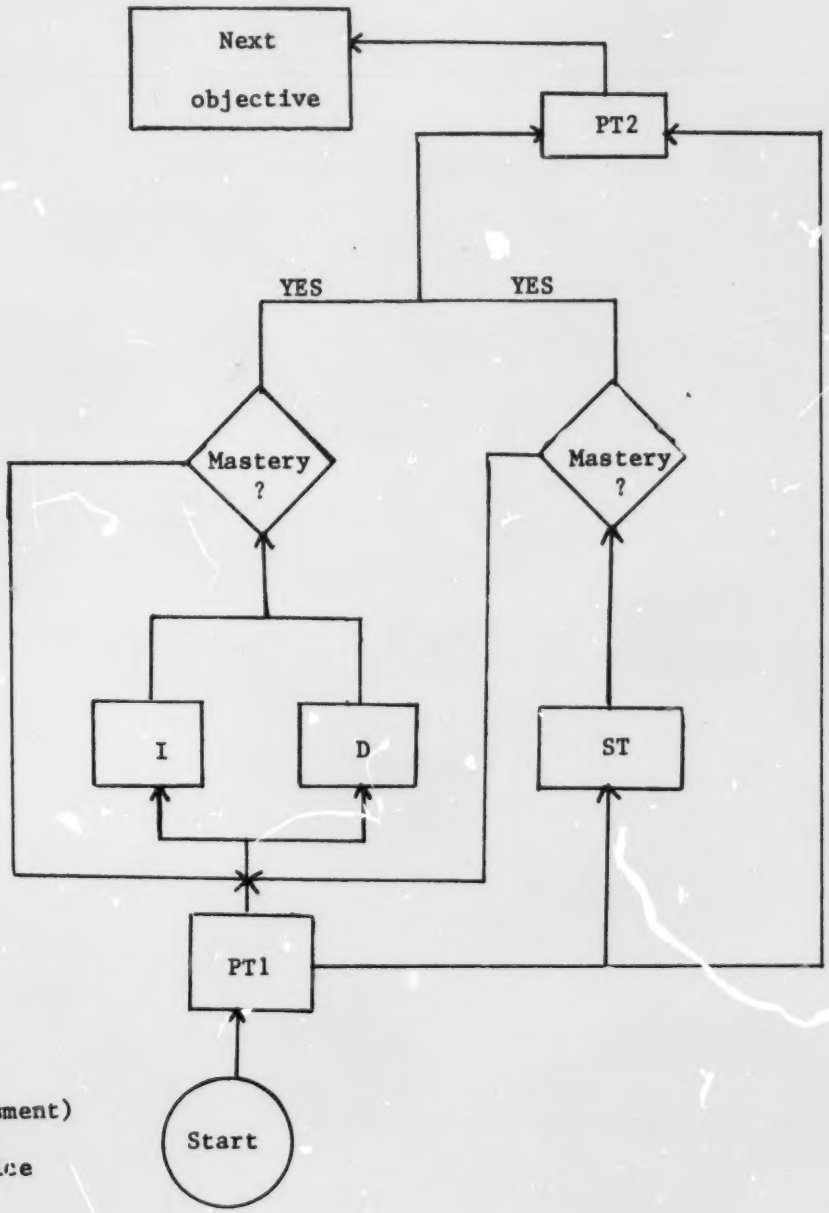
TABLE 3

CRITERION - REFERENCED MEASUREMENT

Decision for I objective	Pupil's response Data (p)	Branching rules
Mastery ($p \geq .80$)	High ($p \geq .90$)	Branch up to highest skill.
	Low ($.80 \leq p \leq .90$)	Branch up to skill midway between this skill and highest untested skill.
Non-mastery ($p \leq .50$)	High ($.40 \leq p \leq .50$)	Branch down to skill midway between this skill and lowest untested skill.
	Low ($p \leq .40$)	Branch down to lowest skill.

Figure 2

A structure of 3 sub-programs in each objective



PT1: pre-test
PT2: post-test
ST: survey-test (self-assessment)
I: Instruction
D: Drill-practice

All sub-programs are chained both internally and externally and are automatically generated according to the student's performance. Hence, all programs can be branched so that the student is working at a level suitable to his ability.

The instruction and drill-practice program is optional. Thus, if the student has had previous knowledge of, and experience with, this objective he may not be required to enter it. This sub-program combines the methods of instruction, such as tutorial and drill. Examples of these approaches are given in Figures 3, 4, and 5.

The sub-programs forming the pre- and post-tests are compulsory for all students so that they may be used to evaluate the student's progress and provide information with regard to areas of weakness or types of errors or difficulties countered. An example of this sub-program can be found in Figure 6.

The survey-test subprogram, on the other hand, is optional. This sub-program is designed to provide a means for self-evaluation prior to entering the post-test. Thus, the purpose of this sub-program is to motivate the students and to bolster their self-confidence. An example of this sub-program is given in Figure 7.

At the end of each sub-program, an "Error Summary" is provided. This summary indicates the student's areas of weakness by showing the types of errors made and the overall percentage of items he scored correctly (See Figure 8).

At the end of the post-test program, students are externally branched to the next appropriate objective. This branching may be either

Figure 3

```
Ready
RUN
MOR8S0    22:07              16-Jun-77

                        YOUR FIRST NAME??  H
                        YOUR LAST NAME??   H

          **********************************************

OBJECTIVE 8:  PRIME FACTORS

THIS PROGRAM INCLUDES

PRE-TEST AND POST-TEST (REQUIRED)

SURVEY-TEST, INSTRUCTION AND DRILL (OPTIONAL)

TYPE I FOR INSTRUCTION
TYPE D FOR DRILL AND PRACTICE?  I


INSTRUCTION

DEFINITION OF PRIME NUMBER:
A NUMBER IS DIVISIBLE BY 1 AND ITSELF ONLY

DEFINITION OF COMPOSITE NUMBER:
A NUMBER IS DIVISIBLE BY 1, ITSELF AND OTHER NUMBER(S)

          EXAMPLES
WHAT IS THE NUMBER?? 12

          ( 2   2   3 )

WHAT IS THE NUMBER?? 13

        IS PRIME

WHAT IS THE NUMBER?? 14

          ( 2  7 )

WHAT IS THE NUMBER?? 15

          ( 3  5 )

WHAT IS THE NUMBER?? 16

          ( 2  2  2  2 )
```

Figure 4

DRILL-PRACTICE: PRIME FACTORS

****

A PRIME NUMBER HAS EXACTLY TWO FACTORS
'1' AND THE NUMBER ITSELF

EXAMPLE: 2,3,5,7,13 ... ARE PRIME NUMBERS

A COMPOSITE NUMBER HAS MORE THAN TWO FACTORS

EXAMPLE: 4,6,24 ... ARE COMPOSITE NUMBERS

NOTE, ONE IS NEITHER PRIME NOR COMPOSITE NUMBER

EXPRESS THE FOLLOWING NUMBERS AS A PRODUCT
OF PRIME

EXAMPLE: 12 = 2x2x3

(YOU MAY USE THE TREE DIAGRAM)

```
      12
     /\
    2x6
   /\/\
  2x2x3
```

12 = 2x2x3

TO EXPRESS 'TIMES' USE THE LETTER 'X'

I WILL ALWAYS ASK WHETHER YOUR STATEMENT IS FINAL
IF IT IS NOT, YOU MAY CHANGE YOUR ANSWER

Figure 5

```
PART 2:  G.C.F.
**********************************************************

EXAMPLES:

FACTORS OF 12 ARE (1,2,3,--4--,6,12)

FACTORS OF 20 ARE (1,2,--4--,5,10,20)

THEREFORE G.C.F. OF 12 and 20 IS --4--


EXAMPLES:

THE COMMON FACTORS OF 12 AND 14 =  1    2


THE COMMON FACTORS OF 20 AND 18 =  1    2

DRILL-PRACTICE

G.C.F. OF 8 and 20 IS?  40
WRONG, G.C.F. OF 8 AND 20 IS 4

G.C.F. OF 20 AND 20 IS?  2
WRONG, G.C.F. OF 20 AND 20 IS 10

G.C.F. OF 20 and 12 IS?  2
WRONG, G.C.F. OF 20 AND 12 IS 4

G.C.F. OF 20 and 2 IS?  2
RIGHT!!

G.C.F. OF 10 AND 16 IS?  2
RIGHT!!

G.C.F. of 12 AND 18 IS?  2
WRONG, G.C.F. OF 12 AND 18 IS 6
```

Figure 6

```
RUN

M012S2    15:47              11-JUN-77


                YOUR FIRST NAME?? NIKKIE
                YOUR LAST NAME?? YIM
               ******************************

                DECIMAL POINTS
                OBJECTIVE 12:
                +, AND - OF DECIMAL NUMERALS

                HORIZONTAL AND VERTICAL FORMS

                TYPE PT1 FOR PRE-TEST, TYPE PT2 FOR POST-TEST
? PTi
                PRE-TEST


                ADDITION

                14.56  +  17.39  =  ? 31.95
RIGHT

                13.29
              +
                13.17
              -----------

                26.46
RIGHT

                19.38  +  17.78  =  ? 37.16
RIGHT

                12.21
              +
                13.23
              -----------

                25.44
RIGHT

                19.49  +  17.84  = ? 37.33
RIGHT
```

Figure 7

```
OLD
Old file name -- MOR7S1

Ready
RUN
MOR7S1  16:38            15-Jun-77

                    YOUR FIRST NAME??  H
                    YOUR LAST NAME??  H

                    OBJECTIVE 7*  FACTORING OF L.C.M. & G.C.F.

                    THIS PROGRAM INCLUDES:
                    PRE-TEST, POST-TEST (REQUIRED)
                    SURVEY-TEST, INSTRUCTION & DRILL (OPTIONAL)

                    PART 1:  L.C.M.

                  **************************************************


                    TYPE ST FOR SURVEY-TEST?  ST



                    SURVEY-TEST

                    L.C.M. OF 2 AND 3 IS 6

                    WHICH IS THE SMALLEST MULTIPLE OF 2 AND 3

                    EXAMPLE:  L.C.M. OF 6 AND 12 IS 2

                    BECAUSE 12 IS THE SMALLEST NUMBER WHICH IS
                    DIVISIBLE BY 6 AND 12
```

Figure 8

```
------------------------------------------------------------------------

ERROR SUMMARY                STUDENT          NIKKIE          YIM

FUNCTIONS

+            -          X          /
 1           0          1          0

 %         TIME       ERRS       TOTAL          DATE
95       5.18333         2          40          16-Jun-77

              GOOD WORK!  YOU HAVE MORE THAN 90% RIGHT
                          IF YOU WISH TO DO DRILL, TYPE D
                          IF YOU WISH TO DO PRE-TEST, TYPE PT1
                          IF YOU WISH TO DO POST-TEST, TYPE PT2
                          IF YOU WISH TO DO SURVEY-TEST, TYPE ST
                          IF YOU WISH TO QUIT, TYPE Q

? Q

                          NICE WORKING WITH YOU, GOOD-BYE

Ready
SAVE
File exists - RENAME/REPLACE

Ready
BYEF
```

backwards or forwards depending upon the student's success or failure at the previous level.

To provide both teachers and students with a guide as to what the CAI programs entail, a written description of programmed objectives has been completed. This description indicated the subject matter, content, grade level, and type of terminal to be used. Instructions for the students and a list of the prerequisites necessary for success at that level are also included to assist the teacher in making a better decision for the student. An example of the general description can be found in Figure 9.

Figure 9

SUBJECT: MATH.

CONTENT: PLACE VALUE & INEQUALITIES

PROGRAM NAME: MOR1SO

GRADE LEVEL: 5,6,7,8,9

AUTHOR: H. HUANG

TERMINAL: TELETYPE

DESCRIPTION:

THIS IS A DRILL AND PRACTICE PROGRAM (OBJECTIVE 1) WHICH INTRODUCES THE BASIC CONCEPT OF PLACE VALUE AS WELL AS INEQUALITIES; SUCH AS:

```
  3.2
+ .5                OR 3.2      .5
-----
  3.7
```

INSTRUCTIONS TO STUDENTS:

THIS PROGRAM MAY BE USED FOR A GROUP-PRESENTATION AS WELL AS AN INDIVIDUALIZED STUDY.

PREREQUISITES:

MOR1S2 OR THE PRE TEST OF OBJECTIVE 1.

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APPENDIX I

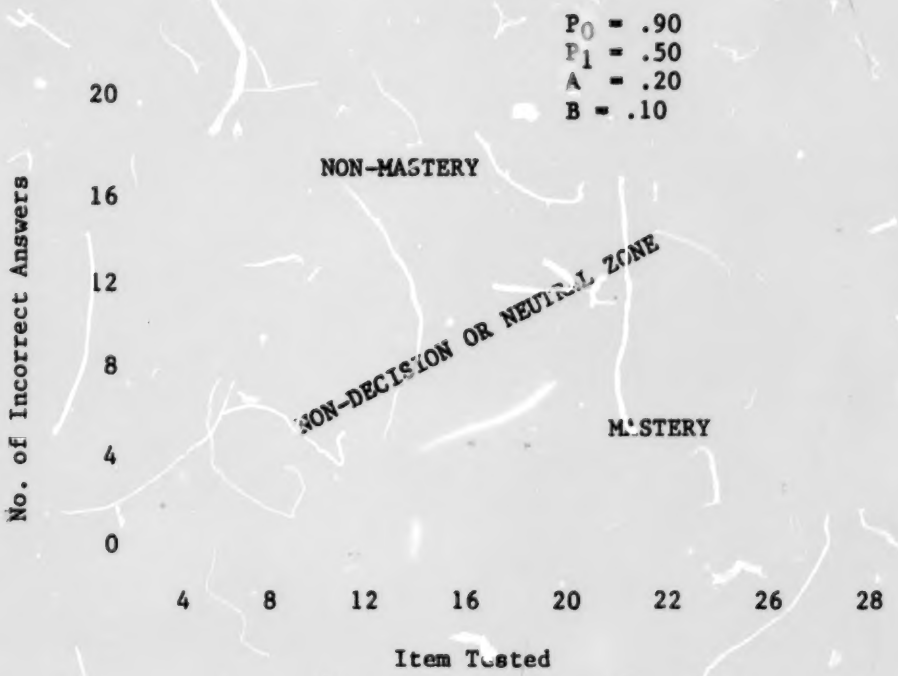
'P' (see Figure 10) denotes the unknown population of items which would be answered correctly if testing were over the entire population of items for the objective. 'P0' and 'P1', which are likely to vary for different objectives, are the randomly generated sampling items which should be answered correctly. These items are selected by curriculum specialists or teachers.

In the testing procedure, the entire population of items is not likely to be tested and, therefore, only selected items and questions are presented. Thus, if $P_o = .90$ and H_o ($p = .90$) is retained, the student is considered to have sufficient mastery of the skills and no instruction is prescribed. However, if $P_1 = .50$ and H_1 ($p = .50$) is retained, insufficient mastery is declared and the remedial routine is introduced. Any sampling test which does not exhaust the population of items for an objective can lead to an incorrect mastery or non-mastery decision. Thus, it is necessary to tolerate the risk of making a wrong decision. Type I(a) error occurs when an examinee has sufficient mastery but testing shows not. Type II(b) error occurs when the examinee lacks proficiency but the test indicates mastery. Therefore, the test should be based on an analysis of the frequencies and types of errors, not on just the correct answers. This procedure would show the areas of weakness of the student and not simply overall performance or level of achievement.

Since this system provides the opportunities for students

to choose an alternative path or objective to enter, the risk of success or failure is involved. Figure 11 provides the description of decision-making in relation to a risky choice. The advantage of computer-assisted instruction, however, is that it provides immediate storage and retrieval of data. This has been shown to be important in the decision-making process.

Figure 10



H_o: P = .90 (student has sufficient mastery)

H_1: P = .50 (student does not have sufficient mastery)

Figure 11

Decision-Matrix

	At/Si	Ac/Ri
At/Ac	At	Ac
Sd/Ri	Sd	Ri

At = teacher's advice

= computer's suggestions

Sd = student's decision

Ri = risk taking

The possibility to succeed and to perform the task effectively is to make the decision intelligently by choosing any two combined modules such as:
(Sd/Ri), At/Ri, (At/Ri, (Ac/Sd)
which imply
At is personal, Ac is impersonal but rational, Sd is a self-determination and Ri is wise risk-taking

CHAPTER 4

A COMPENDIUM OF NATIVE-ORIENTED EDUCATION AND EMPLOYMENT TRAINING PROGRAMS IN ALBERTA: AN OVERVIEW

C. Kanchier
Research Assistant, Office of Educational Development

REASONS FOR PREPARING A COMPENDIUM

This report[1] was prepared in response to the needs of two distinct groups concerned with Native Adult Education: 1) Native adults on the Stoney Indian Reserve (Morley) and the Cree Four Band (Hobbema) as indicated in a research study by Newman Associates (1975); and 2) the needs of educators concerned with Native adult education as expressed at the Consortium Meeting at Maskwachees Cultural College, Hobbema, March, 1976. The Newman Report stated that there is a need for both specialized training for Natives in diverse areas such as teaching, plumbing and law at off-reserve places like educational institutions and for upgrading and otherkinds of programs on reserves. It recommended that: 1) persons representing tertiary institutions cooperatively produce a booklet giving a concise description of Native oriented courses which would be made available to Indian communities, and 2) a committee of representatives from tertiary institutions be formulated to provide consultation to Indian communities for on-site training programs. The educators at the Consortium meeting expressed the need to know what their colleagues in Alberta were doing with respect to program development and evaluation and to exchange ideas with

[1] The report is available from the Office of Educational Development.

them.

STRUCTURE OF THE REPORT

Section I describes programs[2] that were developed by Natives or in consultation with them. Since personal follow-up was conducted by the writer to obtain an accurate explanation of these programs, it appears that Native involvement with these programs was real, rather than token. Readers who are interested in obtaining information on the number of Natives involved in developing programs described in this report are directed to the contact persons of specific programs.

SECTION I CATEGORIES

Section I is divided into two parts: 1) IA - Native Oriented Employment Education Training Programs from January, 1967 to June, 1977; and 2) Ib - Native Oriented Educational Programs from January, 1967 to June, 1977. A two dimensional classification system was adopted to categorize the Employment Education Training Programs to provide the reader with a concise overview of the kinds of programs that are available. For example, these programs are

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[2]A program is a series of learning experiences designed to achieve, in a specified period of time, certain specific instructional objectives for an adult or group of adults. It might constitute a single session, such as a meeting in which more limited objectives are attempted, or it could be a sequential series of meetings based on one or more related objectives, such as a workshop or class. In this study it includes such courses as a three-hour presentation and discussion on Native Art, a two to six month upgrading course in English and/or Mathematics, an eight week welding course, a three month urban living program and a three year curriculum on community resource aide. These programs are conducted on reserves or metis colonies, at educational institutions, in church basements, in community halls, on farms and a variety of other settings.

categorized into: 1) 23 occupational clusters used by the Canadian Classification and Dictionary of Occupations; and 2) six levels illustrating the length of the programs. The educational programs are classified into 19 arbitrary categories to facilitate reader perusal.

Charts IA and IB, illustrating the programs in each category, preceed a one-page description of each program. The program descriptions contain: occupational or educational category, title, goals, student characteristics, locale, program description, length of time in operation, affiliation with tertiary institutions, sponsoring agencies, contact persons and where s(he) can be located. Both the information on the charts and the one page descriptions of the programs are arranged alphabetically.

SECTION II CATEGORIES

Section II outlines programs in which Natives participated. Although, in many cases, Natives comprised more than one half the participants of these programs, and the programs were designed with Natives in mind, they did not belong in Section I because Natives were not consulted specifically with respect to program development. Most programs offered by educational institutions such as community colleges or government agencies like the Alberta Department of Agriculture are of this type. These programs

are outlined in Charts IIA (Employment Education Training) and IIB (Educational). A one-page description of each program in the two categories follows the charts. The programs are described using the same headings as those used in Section I.

OBSERVATIONS CONCLUSIONS

A great deal of time was spent collecting the data for this report. Initially, many people were consulted personally to obtain an overview of the educational scene. Then questionnaires requesting information describing the programs were mailed to over 400 persons representing numerous Alberta institutions and agencies such as community colleges, Native societies, welfare agencies, and government departments. Approximately 50 per cent of the questionnaires were returned. Although this was considered to be a relatively good response, most questionnaires were returned incomplete. Therefore, the writer contacted the correspondents by telephone to obtain the necessary information; they graciously provided the data. There appears to be a number of successful programs in existence which are not listed in this report because the program developers failed, after a few reminders, to provide the data. This is unfortunate because with this information, the report would be more complete.

Although programs described in this report do not constitute all the courses that are currently being conducted in Alberta, they provide an overview of the various types of programs that are provided, as well as the numerous personnel and agencies involved in program development.

CHAPTER 5

LOCUS OF CONTROL IN CANADIAN INDIAN CHILDREN: A PRELIMINARY STUDY

Nalini Stiemerling
Research Assistant

The post-war policy of integrating Indian children in the public school system instead of segregation in federal government schools resulted in rising Indian enrollment in non-federal schools (Hawthorne, 1966, Vol. 11). From 31% in 1961-62, by 1971 61% of all registered Indian children were enrolled in integrated, non-federal schools (Canada Year Book, 1962-70). Currently, about two-thirds of Alberta Indian children attend provincial schools and in 1976, federal school enrollment (including Band-operated schools) stood at 3,910 as against 6,637 for the public system (DIAND, n.d.).

In the sixties, integrated schooling was regarded by educators and policy makers as the preferable alternative:

> The principle of integrated education for all Canadian children is recommended without basic question. The integration of Indian children into the public school system should proceed with due concern for all involved and after the full co-operation of local Indians and non-Indians has been secured (Hawthorne, 1966, Vol. II, p. 12).

In spite of this policy, improvements in the social and economic condition of Canada's Native people have been slow in coming. Indian provincial and national organizations see autonomy, rather than integration, as the first step toward eliminating disparities between Natives and the dominant society. With the 1973 endorsement by the

federal government of the National Indian Brotherhood's policy paper, "Indian Control of Indian Education" (National Indian Brotherhood, 1972), local control of federal schools on reserves by Bands as well as representation of Indian parents on provincial school boards having Indian students in their districts, have now become guidelines for Indian education.

PURPOSE OF THE STUDY

The present study is exploratory in nature. A major purpose is to compare Indian students attending two different types of school, integrated and day reserve, on perception of control over the environment. The construct of locus of control distributes individuals according to the amount of personal responsibility they take for what happens to them:

> As a general principle, internal control refers to the perception of positive and/or negative events as being a consequence of one's own actions and thereby under personal control; external control refers to the perception of positive and/or negative events as being unrelated to one's own behaviours in certain situations and therefore beyond personal control. (Lefcourt, 1966, p. 207).

The Coleman Report on Equality of Education Opportunity (Coleman et al., 1966) showed that, for non-white students in the United States, the sense of environmental control rose with the percentage of white schoolmates. This finding was confirmed by McPartland's

re-analysis of the Coleman data (1968) as well as by the report of the United States Commission on Civil Rights (1967).

The minority group child who feels that success or failure in school tasks is a result of his or her own behaviour ought to show more initiative in school situations and more effort and persistence in the classroom. In the Coleman Report, "internality" in locus of control was related to scores on standardized achievement tests for non-white students in grades 6, 9 and 12. The present study will also examine the relationship between locus of control scores and school achievement, in the form of report card grades, within three schools.

LOCUS OF CONTROL

Poor attendance restricts the benefits many Indian students derive from schooling. It is probable that poor attenders also have a low "academic self-concept" and an external locus of control. This study will, therefore, examine the association between absenteeism and locus of control.

Although the cross-sectional data of the Coleman Report cannot provide conclusive evidence of causal relationships, they do imply a model in which the motivational and value systems of the minority group child are altered when in contact with members of the dominant group. If the norms of the non-Indian children in an integrated school stress high motivation for school achievement and if the Indian student identifies himself as a member of that group, he should acquire the value system of that group. The increase in need for achievement should express itself in more school-appropriate behaviours and in

higher academic achievement.

THE SAMPLE

Parents of the Wesley, Chiniquay and Bearspaw Bands of the Stoney Indians from Morley reserve, near Calgary, have a choice between the day reserve school (K - 9 plus an experimental grade 10) and public elementary, junior and senior high schools in the vicinity of Morley. Similar conditions exist at the Hobbema reserve near Edmonton, home of four bands of Cree Indians, Montana, Louis Bull, Sampson and Ermineskin.

The three groups used in the study are drawn from: 12 - 17 year-old Stoney students attending the day reserve school at Morley; their counterparts from the Hobbema reserve school; and Stoney students from the Morley reserve attending integrated provincial schools. Lack of time prevented the inclusion of a fourth group comprising Hobbema Crees attending integrated provincial schools.

As the study was originally to be confined to Morley, the sampling scheme was dictated by various exigencies at Morley. These included: the small population in this age range, and poor attendance at the Morley reserve school. The Morley sample thus consists of all students in this age range who attended school during the testing period. It cannot be considered fully representative either of students enrolled in school but absent during the testing or of Stoneys who have dropped out of school after reaching school-leaving age. The Hobbema sample was chosen to match the Stoney one for age and sex.

Isolating the effects of racial composition of the school on

the student from potential confounding variables is difficult in a cross-sectional study of this type. The situation is further complicated by the fact that integration is voluntary in both communities studied. Several studies in the United States, reviewed recently by St. John (1975), reported a positive relationship between social status indicators and choice of integrated schools. In the present case, too, families of integrated and reserve-schooled students may be expected to differ in social status and degree of acculturation. Further, as the federal school system and the public systems are different in many ways, the possibility of confounding the effects of racial composition with those of qualitative differences between the systems exist. A further complication is introduced by the fact that the quotas on Indian enrollment set by the two integrated schools in this study allow only the most "academically gifted" and highly motivated Indian students to enter them. From this host of confounding variables, two have been chosen to serve as controls: family socio-economic status and mental ability of the student as measured by a non-verbal test.

ATTRIBUTION THEORY

Recently, Weiner (1974) has contended that locus of control is not the sole factor influencing expectancies of reinforcement. Experimental evidence points to the need for a two dimensional scheme. The dimension of stability (stable - unstable) should be added to that of locus of control (internal - external). Weiner suggests that locus of control influences affect responses to success or failure but that expectancy of reinforcement

is influenced by attributions to the stability dimension. Thus, attributing failure in an examination to task difficulty rather than bad luck (both aspects of external control) would result in decrements of expectancy of success in the future but in little negative affect. Likewise, attributing failure in an examination to lack of ability rather than lack of effort (both aspects of internal control) would result in similar decrements in expectancy of success in the future but produce great negative effect. Task difficulty and lack of ability are both stable factors; bad luck and lack of effort are unstable. Meyer (1970) showed that decrements in expectancy of success over five repeated failures at a digit-symbol substitution task were greater for subjects who attributed failure largely to the stable factors of low ability and task difficulty than for those who attributed failure largely to lack of effort and bad luck. Causal attributions also affect intensity of work. Subjects who ascribed failure to the stable factors of low ability and task difficulty took a longer time to complete the first three rows of each digit-symbol substitution trial than subjects whose attributions to stable factors were low.

Meyer (1970) and Weiner et al. (1972) have received support for their attribution approach to locus of control using German and United States school and university samples. In the present study, an attempt has been made to replicate this work, using Meyer's (1970) experimental paradigm, on a small sample (N = 26) of Morley students.

INSTRUMENTS

Two self-report measures are being used to assess internal-external locus of control. The Nowicki-

Strickland Locus of Control Scale is based on a measure developed by Rotter (1966). A forty-item Yes/No scale, it is appropriate for children from ages nine through 18. The second measure, the Intellectual Achievement Responsibility Scale (IAR) developed by Crandall, Katkovsky and Crandall (1965), has been used extensively in social, personality, clinical and educational research. It has been translated into nine foreign languages and also into braille. Whereas the Nowicki-Strickland scale includes many external factors such as luck, fate or parents, the IAR is restricted to "significant others", such as teachers, parents, and peers, with whom a child has face-to-face contact. Moreover, the range of situations for which the subject is asked to ascribe reinforcement responsibility is limited in the IAR to intellectual-academic ones. The full-scale version of the IAR, consisting of 34 forced-choice items, is being used. The IAR will be scored for reinforcement responsibility for success, reinforcement responsibility for failure, as well as for ability and effort in the failure stem (Weiner and Kukla, 1970).

Cress (1974) considers that personality tests borrowed from Caucasian middle-class cultures must be validated on Indian populations before they can be considered appropriate. Tyler and Holsinger (1975) observed predicted age and ethnic group differences in the Nowicki-Strickland Scale on a sample of Chippewa Indian and white students. Validation data on the IAR which could be relevant to the present study is confined to black or low-SES populations in the United States. One of the major purposes of the present study is the

assessment of the validity of the construct of locus of control as well as two operationalizations of it for Canadian Indian students.

The third instrument used is Standard Progressive Matrices - SPM-(Raven, 1958) administered in small groups in the unspeeded form. MacArthur (1968, 1969) found this test to have "minimum cultural bias" and good reliability in an Albertan Indian-Métis sample. It tapped "abilities least affected by differences in native and white backgrounds" (MacArthur, 1969, p. 56).

The last instrument, which is used to investigate differences within the construct of internal locus of control, was administered to a small sample of 26 Morley students. The paradigm was borrowed from Meyer (1970). After up to 256 practice substitutions, subjects are asked to complete four rows of 16 digit-symbol substitutions on each of five trials within one minute. The task is "timed" so that all subjects "fail" when they are on the fourth row on each trial. Prior to each trial, expectancies of success on the subsequent trial are obtained on an eleven-point scale, from 0 to 10. After each "failure", subjects are asked to attribute causality to the factors of a) lack of ability; b) lack of effort; c) task difficulty; and d) bad luck. Six paired-comparison questions, representing all possible pairings of these four factors, are asked. This methodology is derived from McMahan (1973). Attribution scores are derived by assigning one point to each factor when it is checked as preferred; the score for each factor on each trial thus ranges from 0 to 3. Apart from expectancy and attributional data, a third measure, "intensity of

performance" is obtained on each trial by noting the time taken to complete the first three rows of substitutions.

HYPOTHESES

The following hypothesized relationships will be examined:

1. The integrated school group will have a more internal locus of control than both day reserve school groups. These differences will remain when mental ability and social status are statistically controlled. This will be the case for both locus of control measures as well as for the responsibility for success and responsibility for failure stems of the IAR.

2. Internal locus of control will be associated with higher educational achievement (as measured by report card grades).

3. Internal locus of control will be associated with low absenteeism.

4. Sex and age differences will occur in locus of control, with girls being significantly more internal than boys and older students more internal than younger ones.

5. The responsibility for success and the responsibility for failure subscores of the IAR will be independent.

6. The Nowicki-Strickland and IAR means of the combined Indian samples will be significantly more "external" than white norms presented by Crandall, Katkovsky and Crandall (1965) and Nowicki-Strickland (1973).

7. IAR subscores on the two attributional dimensions of responsibility for failure due to lack of effort and responsibility for failure due to lack of ability will be related to attribution to lack of effort and

attribution to lack of ability scores on the Digit-Symbol task.

8. Decrements in expectancy of success over five repeated failures on the Digit-Symbol tasks will be greater for subjects who attribute failure to the stable factors of low ability and task difficulty than for subjects who attribute failure to the unstable factors of lack of effort or bad luck.

POSSIBLE RECOMMENDATIONS

As stated earlier, lack of time prevented including a fourth group in the study, consisting of Cree students from the Hobbema reserve attending integrated, provincial schools. However, if the reserve-schooled Crees resemble the reserve-schooled Stoneys, rather than the provincially-schooled Stoneys, then it is probable that they differ from their provincially-schooled counterparts in their perceptions of control over reinforcement.

This study could have implications for programme development in both school systems serving Indian students. This section will be limited to describing a few attempts that could be made at the junior high level. Clearly, however, innovations in the education of teachers for Native students, curriculum development, personnel policies as well as changes in majority-minority relations, not only in the classroom, but also in the larger society, must accompany any motivation change programmes.

If the predicted relationships between locus of control and school achievement and absenteeism are observed in the data, attempts can be made to modify the locus of control of "external" students.

Programmes could use a combination of behaviouristic and phenomenological methods. They could be implemented by teachers, Native counsellors or teacher-aides. After identification of effective reinforcers, attendance behaviour in poor attenders would be contingently reinforced. At the phenomenological level, self-verbalizations (Reimanis, 1971) and achievement motivation (deCharms, 1972) could be modified in the direction of internality. A distinction in achievement motivation programmes could be made between fixed or stable internal causal factors, such as ability, and unstable or modifiable elements, such as effort. Teaching that outcome is influenced by effort should facilitate achievement motivation (Weiner and Sierad, 1973, p. 149).

A demonstrably successful programme by deCharms (1972) consists in giving teachers training in "personal causation" and supplementing this with regular meetings during the school year in which they design classroom exercises stressing self-concept, achievement motivation, realistic goal-setting, planning, personal responsibility and feelings of personal causation and self-confidence in students.

The purpose of the present research is to examine the relationship between personality variables and several criterion measures with a view to aiding the communities concerned in the development of programmes to prevent absenteeism and increase achievement motivation. Until the data analysis is completed and we have a clearer idea of relationships between underlying variables, we cannot be more specific in our recommendations. Once the present data is analysed, and the findings interpreted, more definite suggestions will follow.

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